PIONEER®
The Art of Entertainment

Service Manual

ORDER NO.
RRV1286

CASSETTE TAPE DECK

CT-S440S

- **Refer to the service manual RRV1123 for CT-S430S/HBXJ.**

THIS MANUAL IS APPLICABLE TO THE FOLLOWING MODEL(S) AND TYPE(S).

Type	Model CT-S440S	Power Requirement	The voltage can be converted by the following method.
HBWXJ	○	AC230 - 240V	AC220 - 230V, *
HEMXJ	○	AC220 - 230V	AC230 - 240V, *
HEWMXJ	○	AC220 - 230V	AC230 - 240V, *
HLXJ	○	AC220 - 230V	AC230 - 240V, *
SDXJ	○	AC110V/120 - 127V/220V/240V	With the voltage selector

* : Alter the wiring of the Power-supply block at the primary winding Power-transformer referring to the "Line Voltage Selection" described in Service Manual.

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1. CONTRAST OF MISCELLANEOUS PARTS

NOTES:

- Parts marked by "NSP" are generally unavailable because they are not in our Master Spare Parts List.
- The ⚠ mark found on some component parts indicates the importance of the safety factor of the part. Therefore, when replacing, be sure to use parts of identical designation.
- Parts marked by " ⊙ " are not always kept in stock. Their delivery time may be longer than usual or they may be unavailable.

■ CONTRAST OF CT-S440S/HBWXJ, HEMXJ, HEWMXJ, HLXJ, SDXJ AND CT-S430S HBXJ

CT-S440S/HBWXJ, HEMXJ, HEWMXJ, HLXJ, SDXJ and CT-S430S/HBXJ have the same construction except for the following :

Mark	Symbol & Description	Part No.						Remarks
		CT-S430S/ HBXJ	CT-S440S/ HBWXJ	CT-S440S/ HEMXJ	CT-S440S/ HEWMXJ	CT-S440S HLXJ	CT-S440S/ SDXJ	
⚠	Power Transformer (AC220 – 230V/230 – 240V)	RTT1254	RTT1254	RTT1254	RTT1254	RTT1254	Not Used	
⚠	Power Transformer (AC110V/120 – 127V /220V/240V)	Not Used	Not Used	Not Used	Not Used	Not Used	RTT1255	
⚠	AC Power Cord	PDG1055	PDG1055	PDG1003	PDG1003	PDG1003	PDG1013	
⚠	Fuse (T5A)	PEK1003	PEK1003	Not Used	Not Used	Not Used	Not Used	Refer to Fig.3
	FL Lens	RAH2413	RAH2413	RAH2413	RAM2413	RAH2414	RAH2414	
	Rear Panel	RNA1818	RNA1925	RNA1924	RNA1924	RNA1927	RNA1926	
	Pin Cap	VEC1616	VEC1616	Not Used	Not Used	Not Used	Not Used	
⚠	Voltage Selector	Not Used	Not Used	Not Used	Not Used	Not Used	PSB1002	Refer to Fig.2
	Front Panel	RAH2533	RAH2537	RAH2537	RAH2537	RAH2537	RAH2537	
	Door Pocket	RAH2443	RAH2539	RAH2539	RAH2539	RAH2539	RAH2539	
	Stabilizer Panel	Not Used	RAH1483	RAH1483	RAH1483	RAH1483	RAH1483	Refer to Fig.1
	Stabilizer B	Not Used	REB1085	REB1085	REB1085	REB1085	REB1085	
	Getter	Not Used	RAX1026	RAX1026	RAX1026	RAX1026	RAX1026	
	Operating Instructions (English)	RRB1146	RRB1157	Not Used	Not Used	Not Used	Not Used	
	Operating Instructions (English/French/German/Italian/Dutch/ Swedish/Spanish/Portuguese)	Not Used	Not Used	RRE1114	Not Used	Not Used	Not Used	
	Operating Instructions (German)	Not Used	Not Used	Not Used	RRD1157	Not Used	Not Used	
	Operating Instructions (English/Spanish/Chinese)	Not Used	Not Used	Not Used	Not Used	RRE1115	RRE1115	
	Packing Case	RHG1572	RHG1652	RHG1651	RHG1651	RHG1653	RHG1653	
	Pad Spacer A	RHC1039	RHC1039	Not Used	Not Used	Not Used	Not Used	
	Pad Spacer B	RHC1041	RHC1041	Not Used	Not Used	Not Used	Not Used	
NSP	Mother Unit	RWM1697	RWM1794	RWM1793	RWM1793	RWM1793	RWM1975	
	├── Main Unit	RWZ3208	RWZ3462	RWZ3462	RWZ3462	RWZ3462	RWZ3462	
	│ └ Dolby S Unit	RWX1101	RWX1109	RWX1109	RWX1109	RWX1109	RWX1109	
	├── OPSW Unit	RWZ3211	RWZ3463	RWZ3463	RWZ3463	RWZ3463	RWZ3463	
	├── FL Unit	RWZ3214	RWZ3464	RWZ3464	RWZ3464	RWZ3464	RWZ3464	
NSP	├── TR1 Unit	RWZ3298	RWZ3466	RWZ3465	RWZ3465	RWZ3465	RWZ3467	
NSP	└── TR2 Unit	RWZ3220	RWZ3468	Not Used	Not Used	Not Used	Not Used	

● EXPLODED VIEWS

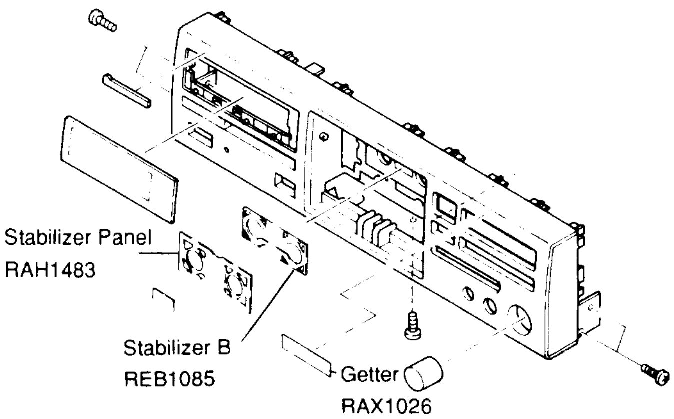


Fig. 1

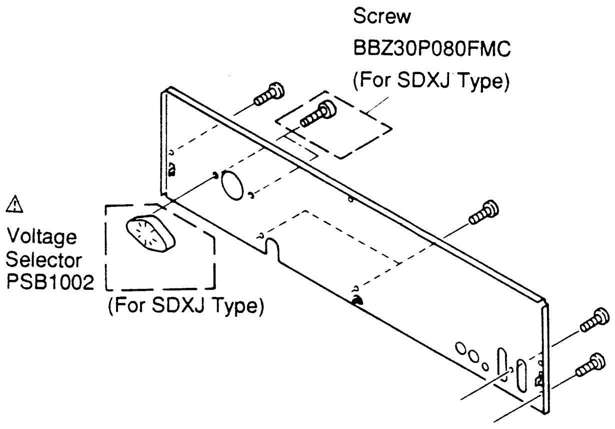

Screw
BBZ30P080FMC
(For SDXJ Type)
⚠
Voltage
Selector
PSB1002
(For SDXJ Type)

Fig. 2

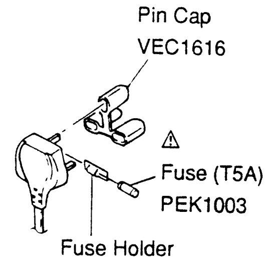

Pin Cap
VEC1616
⚠
Fuse (T5A)
PEK1003
Fuse Holder

Fig. 3

MAIN UNIT

RWZ3462 and RWZ3208 have the same construction except for the following:

Mark	Symbol & Description	Part No.		Remarks
		RWZ3208	RWZ3462	
	D1151, D1154	Not Used	1SS355	*
	D1152, D1153	Not Used	1SS254	*
	Dolby S Unit	RWX1101	RWX1109	

Note * : Refer to "2. SCHEMATIC DIAGRAM".

OPSW UNIT

RWZ3463 and RWZ3211 have the same construction except for the following:

Mark	Symbol & Description	Part No.		Remarks
		RWZ3211	RWZ3463	
	D1451	SEL6410G	SLR – 342MGT31	
	D1452	SEL6C10R	SLR – 342VRT31	

FL UNIT

RWZ3464 and RWZ3214 have the same construction except for the following:

Mark	Symbol & Description	Part No.		Remarks
		RWZ3214	RWZ3464	
	D1520	SEL6210S	SLR – 342UCT31	

TR1 UNIT

RWZ3466 and RWZ3465, RWZ3467 and RWZ3298 have the same construction except for the following:

Mark	Symbol & Description	Part No.				Remarks
		RWZ3298	RWZ3466	RWZ3465	RWZ3467	
	C1025	CKSQYF223Z50	CKSQYF223Z50	Not Used	Not Used	
⚠	C1033	Not Used	Not Used	Not Used	VCG – 044	*
⚠	C1031	Not Used	Not Used	VCG – 044	Not Used	*
⚠	Capacitor Cover	Not Used	Not Used	REC – 150	REC – 150	*
	Terminal	Not Used	Not Used	Not Used	PKC – 027	*

Note * : Refer to "2. SCHEMATIC DIAGRAM".

TR2 UNIT

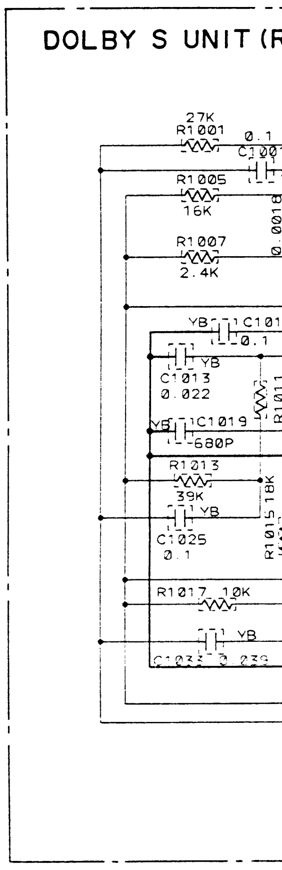
Although RWZ3220 and RWZ3468 different in part number, consist of the same components.

■ PARTS LIST

A

Mark	No.	Description	Part
	DOLBY S UNIT		
	SEMICONDUCTORS		
	IC100, IC1002		CXA1917S
	CAPACITORS		
	C1017, C1018		CEJA010M50
	C1057-C1060		CEJA470M16
	C1023, C1024, C1031, C1032		CEJAR10M50
	C1037, C1038		CEJAR10M50
	C1007, C1008, C1015, C1016		CEJAR22M50
	C1029, C1030, C1039, C1040		CEJAR22M50
	C1027, C1028, C1035, C1036		CEJAR47M50
	C1001, C1002, C1011, C1012		CKSQYB104
	C1025, C1026, C1055, C1056		CKSQYB104
	C1003-C1006		CKSQYB182
	C1045, C1046		CKSQYB222
	C1013, C1014, C1053, C1054		CKSQYB223
	C1033, C1034, C1049, C1050		CKSQYB393
	C1047, C1048		CKSQYB471
	C1041, C1042		CKSQYB473

B


DOLBY S UNIT (F
27K
R1001
0.1
R1005
16K
R1007
2.4K
C1013
0.022
C1019
680P
R1013
39K
C1025
0.1
R1017 10K

C

D

SCH-1F

DOLBY S UNIT

NOTE FOR SCHEMATIC DIAGRAMS (Type 6A)

1. **When ordering service parts, be sure to refer to "PARTS LIST of EXPLODED VIEWS" or "PCB PARTS LIST".**
2. **Since these are basic circuits, some parts of them or the values of some components may be changed for improvement.**
3. **RESISTORS**:
   Unit: k:kΩ, M:MΩ, or Ω unless otherwise noted.
   Rated power: 1/4W, 1/6W, 1/8W, 1/10W unless otherwise noted.
   Tolerance: (F): ±1%, (G): ±2%, (K): ±10%, (M): ±20% or ±5% unless otherwise noted.
4. **CAPACITORS**:
   Unit: p:pF or µF unless otherwise noted.
   Ratings: capacitor (µF)/ voltage (V) unless otherwise noted.
   Rated voltage: 50V except for electrolytic capacitors.
5. **COILS**:
   Unit: m:mH or µH unless otherwise noted.
6. **VOLTAGE AND CURRENT**:
   ▭ or ← V :
   DC voltage (V) in STOP mode unless otherwise noted.
   ⇦ mA or ← mA :
   DC current in STOP mode unless otherwise noted.
7. **OTHERS**:
   - ⊘ or ● : Adjusting point.
   - ◁ : Measurement point.
   - The ⚠ mark found on some component parts indicates the importance of the safety factor of the parts. Therefore, when replacing, be sure to use parts of identical designation.
8. **SCH−□ ON THE SCHEMATIC DIAGRAM**:
   - SCH−□ indicates the drawing number of the schematic diagram. (SCH stands for schematic diagram.)
9. **SWITCHES** (Underline indicates switch position):

OPSW UNIT
S1401 : REW
S1402 : REC
S1403 : BLE
S1404 : STOP
S1406 : I/F
S1407 : FF
S1408 : FWD
S1409 : CDSYNC
S1410 : PAUSE
S1411 : MUTE
S1412 : DOLBY

FL UNIT
S1505 : POWER SW
S1506 : RESET
S1507 : MODE/DISP OFF
S1508 : METER RANGE

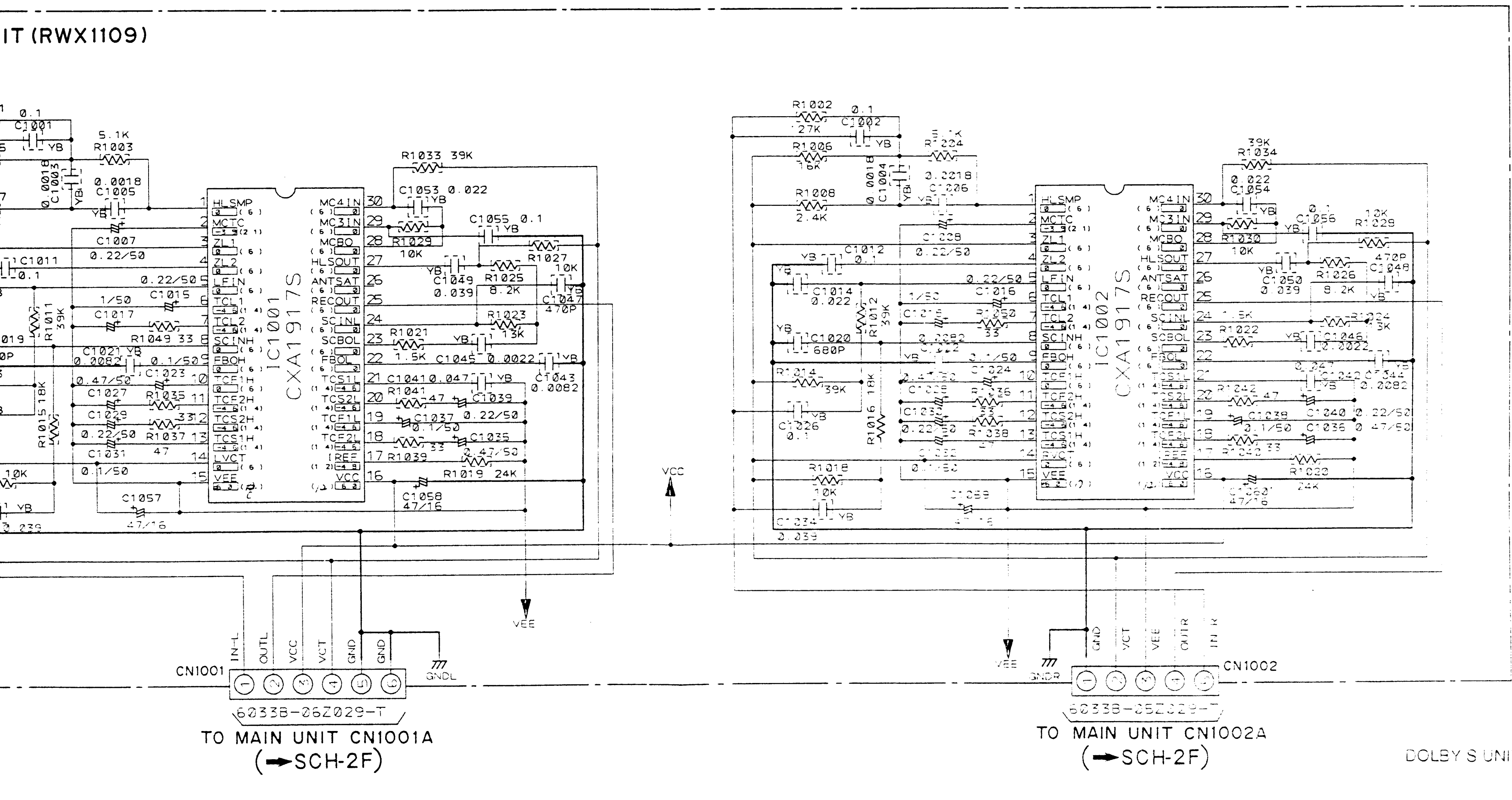
2. SCHEMATIC DIAGRAM

1. DOLBY S UNIT

Part No.
1917S
010M50
470M16
R10M50
R10M50
R22M50
R22M50
R47M50
YB104K25
YB104K25
YB182K50
YB222K50
YB223K50
YB393K50
YB471K50
YB473K50

Mark	No.	Description	Part No.
	C1019, C1020		CKSQYB681K50
	C1021, C1022, C1043, C1044		CKSQYB822K50
RESISTORS			
	All Resistors		RS1/10S□□□J
OTHERS			
	CN1002	CONNECTOR	6033B-05Z029
	CN1001	CONNECTOR	6033B-06Z029

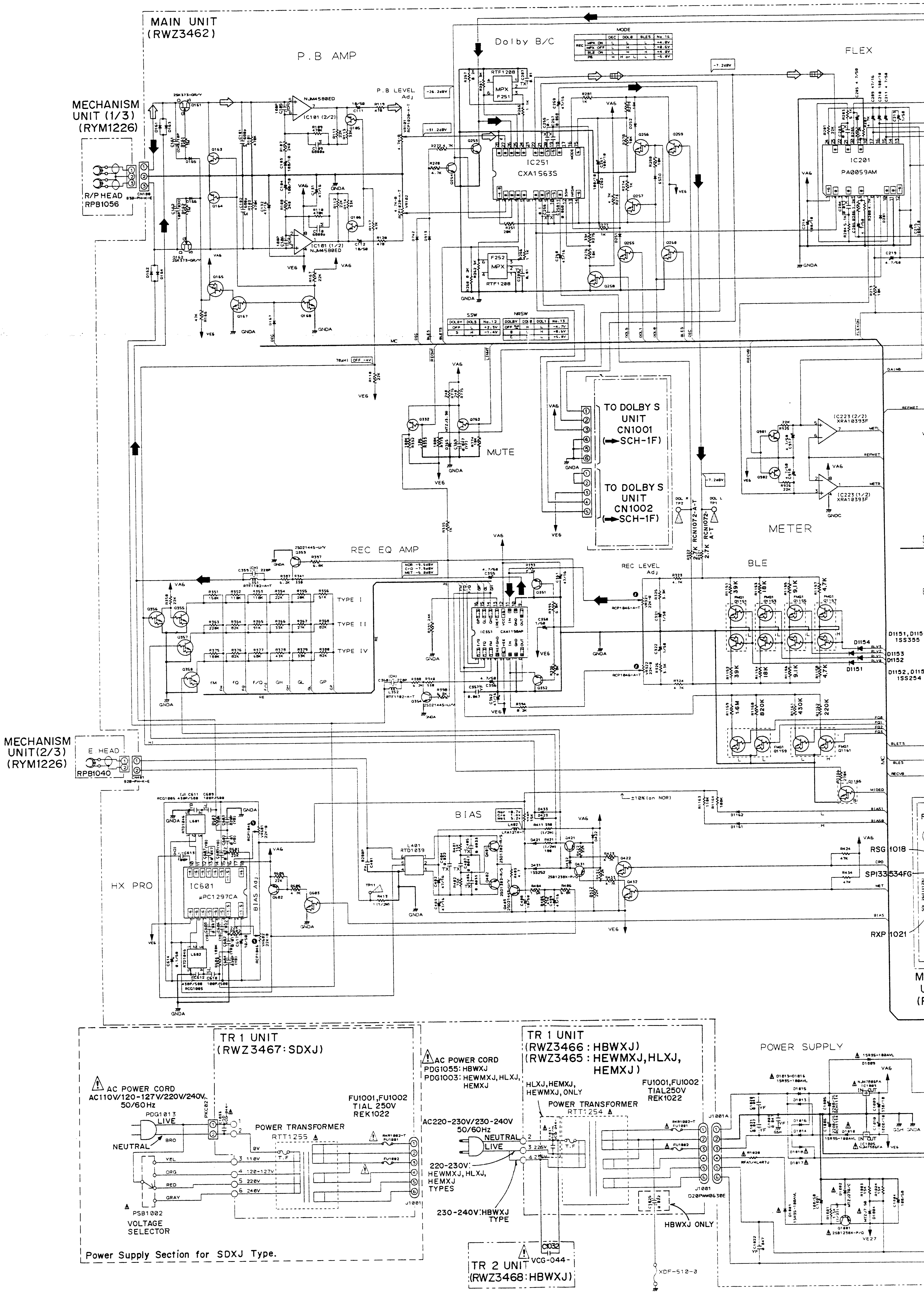
SCH-1F


IT (RWX1109)
IC1001
CXA1917S
IC1002
CXA1917S
CN1001
IN-L
OUTL
VCC
VCT
GND
GND
GNDL
6033B-26Z029-T
TO MAIN UNIT CN1001A
(→SCH-2F)
VCC
VEE
CN1002
GNDR
GND
VCT
VEE
OUTR
IN-R
6033B-25Z029-T
TO MAIN UNIT CN1002A
(→SCH-2F)

DOLBY S UNIT

SCH-1F

2. MAIN UNIT, OPSW UNIT FL UNIT


MAIN UNIT
(RWZ3462)
P.B AMP
Dolby B/C
FLEX
MECHANISM UNIT (1/3) (RYM1226)
R/P HEAD RPB1056
IC101 NJM4580ED
P.B LEVEL Adj
IC251 CXA1563S
RTF1208
MPX
F251
F252
IC201 PA0059AM
MUTE
TO DOLBY S UNIT CN1001 (→SCH-1F)
TO DOLBY S UNIT CN1002 (→SCH-1F)
METER
IC223 (2/2) XRA10393F
IC223 (1/2) XRA10393F
REC EQ AMP
TYPE I
TYPE II
TYPE IV
IC351 CXA1150AP
REC LEVEL Adj
BLE
D1154
D1153
D1152
D1151
MECHANISM UNIT(2/3) (RYM1226)
E HEAD
RPB1040
HX PRO
IC601 μPC1297CA
BIAS Adj.
BIAS
L401 RTD1239
RSG1018
SPI33534FG
RXP1021
POWER SUPPLY
TR 1 UNIT (RWZ3467:SDXJ)
AC POWER CORD AC110V/120-127V/220V/240V 50/60Hz
PDG1013
LIVE
NEUTRAL
POWER TRANSFORMER RTT1255
FU1001,FU1002 TIAL 250V REK1022
PS81002 VOLTAGE SELECTOR
Power Supply Section for SDXJ Type.
AC POWER CORD PDG1055: HBWXJ PDG1003: HEWMXJ, HLXJ, HEMXJ
TR 1 UNIT (RWZ3466: HBWXJ) (RWZ3465: HEWMXJ, HLXJ, HEMXJ)
HLXJ, HEMXJ, HEWMXJ, ONLY
POWER TRANSFORMER RTT1254
FU1001,FU1002 TIAL250V REK1022
AC220-230V/230-240V 50/60Hz
220-230V: HEWMXJ, HLXJ, HEMXJ TYPES
230-240V: HBWXJ TYPE
TR 2 UNIT (RWZ3468: HBWXJ)
C1032 VCG-044-
HBWXJ ONLY
XDF-510-0
J1001
GSH

Line Voltage Selection

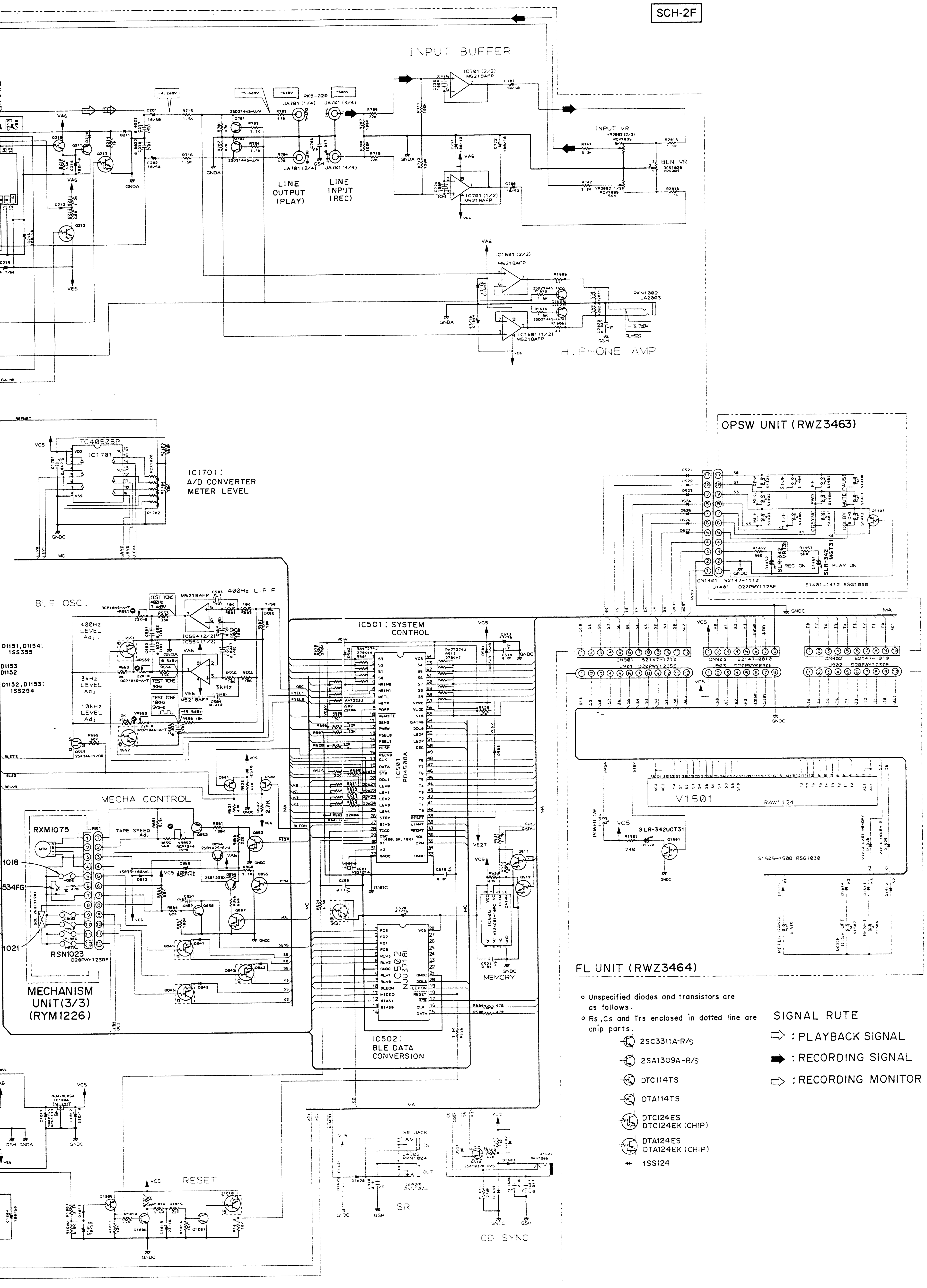
Line voltage can be chaged by the foilowing modification :

1. Disconnect the AC power cord.
2. Remove the cover.
3. Chenge the connection of TRANSFORMER 1 UNIT primary pins.
4. Stick a line voltage label on the rear panel.

Part No.	Description
AAX – 193	220V label
AAX – 192	240V label

]

SCH-2F


INPUT BUFFER
IC701 (2/2) M5218AFP
IC701 (1/2) M5218AFP
LINE OUTPUT (PLAY)
LINE INPUT (REC)
JA701 (1/4)
JA701 (2/4)
JA701 (3/4)
JA701 (4/4)
RKB-020
INPUT VR
BLN VR
IC1601 (2/2) M5218AFP
IC1601 (1/2) M5218AFP
H.PHONE AMP
RKN1002 JA2003
OPSW UNIT (RWZ3463)
CN1401 52147-1110
J1401 D20PWY1125E
S1401-1412 RSG1050
SLR-342VR
SLR-342MG731
REC ON
PLAY ON
TC4050BP IC1701
IC1701: A/D CONVERTER METER LEVEL
BLE OSC.
400Hz L.P.F
400Hz LEVEL Adj.
3kHz LEVEL Adj.
10kHz LEVEL Adj.
TEST TONE 400Hz
TEST TONE 3kHz
TEST TONE 10kHz
IC554 (2/2)
M5218AFP
D1151,D1154: 1SS355
D1153 D1152
D1152,D1153: 1SS254
IC501: SYSTEM CONTROL
IC501 PD4508A
MECHA CONTROL
TAPE SPEED Adj.
RXM1075
RSN1023
D20PWY1230E
MECHANISM UNIT(3/3) (RYM1226)
IC502 NJU3718L
IC502: BLE DATA CONVERSION
IC505 MEMORY
V1501 RAW1124
SLR-342UCT31
S1525-1508 RSG1030
FL UNIT (RWZ3464)
CN901 52147-1210
J901 D20PWY1225E
CN903 52147-0810
J903 D20PWY0825E
CN902 52147-1010
J902 D20PWY1025E
RESET
SR
SR JACK
CD SYNC

- Unspecified diodes and transistors are as follows.
- Rs, Cs and Trs enclosed in dotted line are chip parts.

2SC3311A-R/S

2SA1309A-R/S

DTC114TS

DTA114TS

DTC124ES
DTC124EK (CHIP)

DTA124ES
DTA124EK (CHIP)

1SS124

SIGNAL RUTE

⇨ : PLAYBACK SIGNAL

➡ : RECORDING SIGNAL

⇨ : RECORDING MONITOR SIGNAL

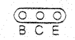
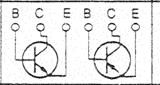
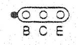
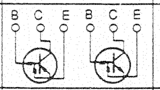
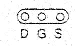
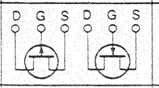
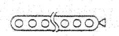
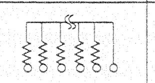
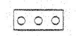
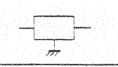
MAIN UNIT, OPSW UNIT
FL UNIT

SCH-2F

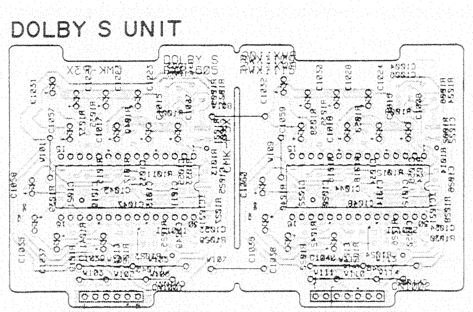
3. PCB CONNECTION DIAGRAM • This diagram is viewed from the mounted parts side.

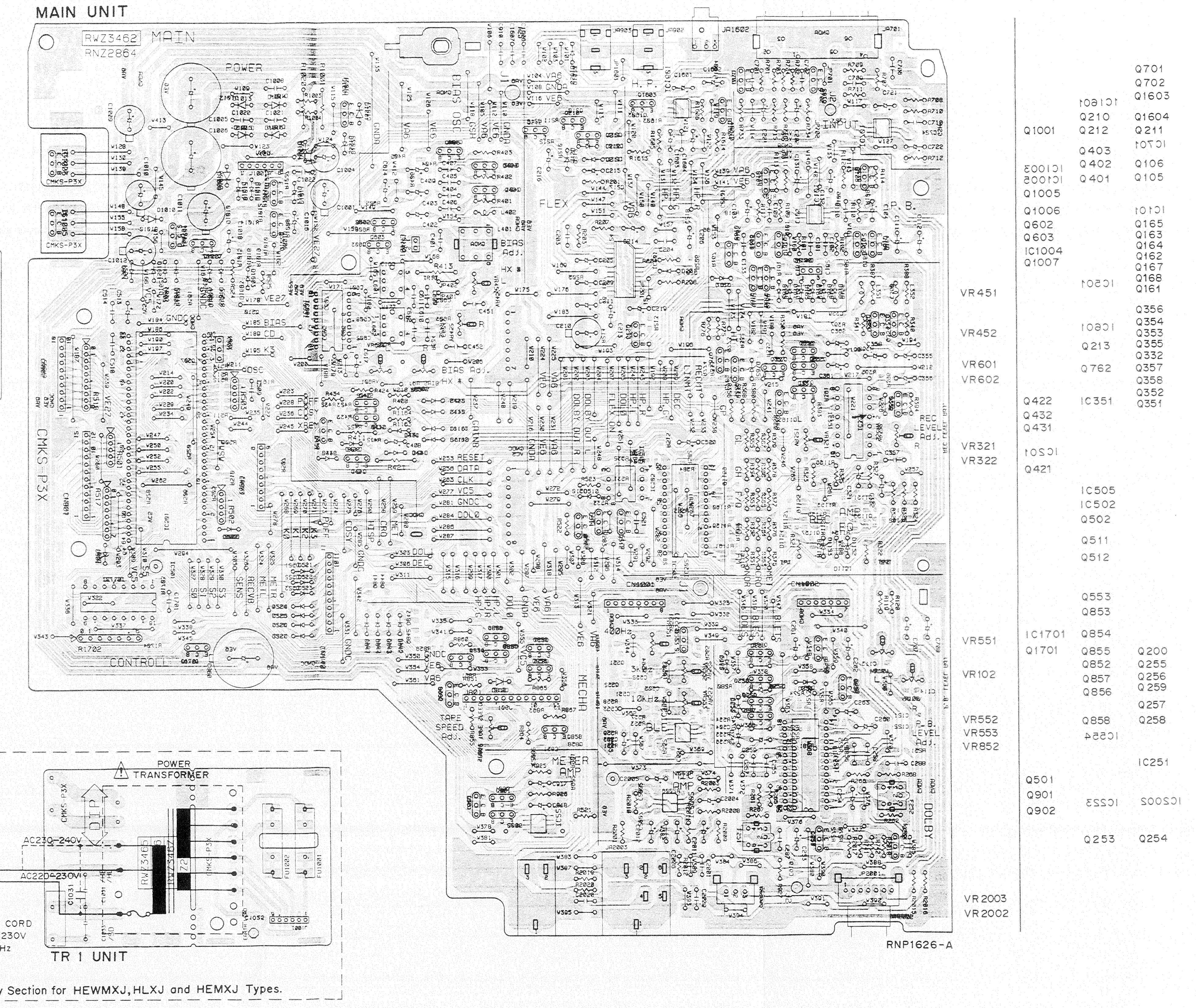
NOTE FOR PCB DIAGRAMS:

1. Part numbers in PCB diagrams match those in the schematic diagrams.
2. A comparison between the main parts of PCB and schematic diagrams is shown below.

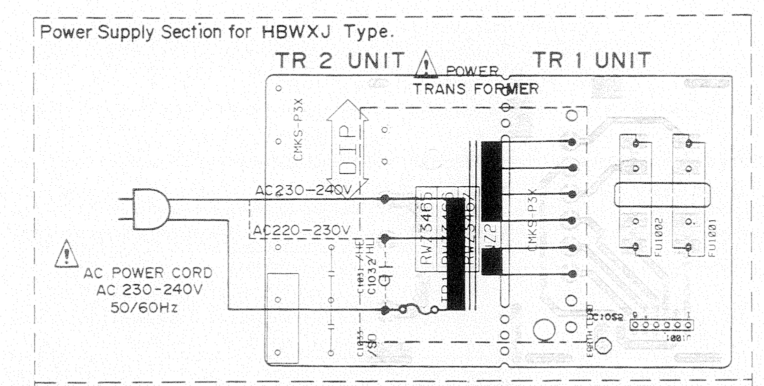
Symbol in PCB Diagrams	Symbol in Schematic Diagrams	Part Name
		Transistor
		Transistor with resistor
		Field effect transistor
		Resistor array
		3- terminal regulator

- The parts mounted on this PCB include all necessary parts for several destinations. For further information for respective destinations, be sure to check with the schematic diagram.

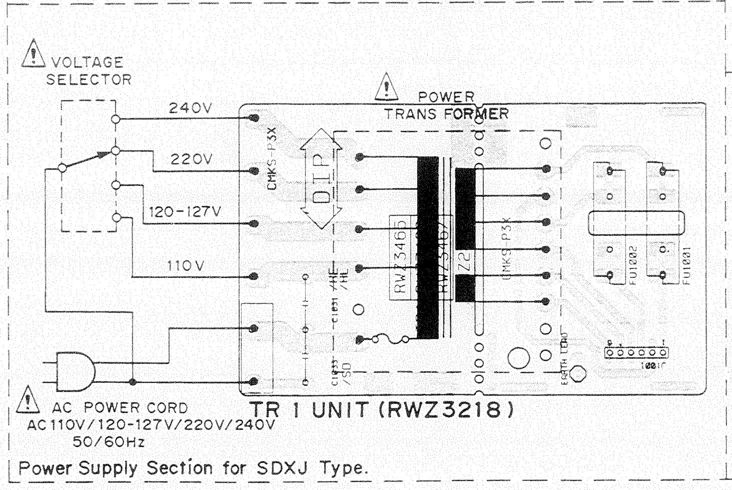

DOLBY S UNIT


MAIN UNIT
RWZ3462 MAIN
RNZ2864
POWER
BIAS OSC
H.P.
INPUT
FLEX
BIAS Adj.
HX
BIAS Adj.
CMKS-P3X
RESET
DATA
CLK
VCS
GNDC
DOLBY OUT
CONTROLL
MECHA
TAPE SPEED Adj.
METER AMP
REC LEVEL Adj.
P.B. LEVEL Adj.
DOLBY
RNP1626-A
VR451
VR452
VR601
VR602
VR321
VR322
VR551
VR102
VR552
VR553
VR852
VR2003
VR2002
Q1001
IC1003
IC1005
Q1005
Q1006
Q602
Q603
IC1004
Q1007
Q422
Q432
Q431
IC201
Q421
IC1701
Q1701
Q501
Q901
Q902
IC1601
Q210
Q212
Q403
Q402
Q401
IC501
IC601
Q213
Q762
IC351
IC505
IC502
Q502
Q511
Q512
Q553
Q853
Q854
Q855
Q852
Q857
Q856
Q858
IC554
IC223
Q253
Q701
Q702
Q1603
Q1604
Q211
IC701
Q106
Q105
IC101
Q165
Q163
Q164
Q162
Q167
Q168
Q161
Q356
Q354
Q353
Q355
Q332
Q357
Q358
Q352
Q351
Q200
Q255
Q256
Q259
Q257
Q258
IC251
IC2005
Q254
POWER TRANSFORMER
AC 230-240V
AC 220-230V
AC POWER CORD
AC 220 - 230V
50/60Hz
TR 1 UNIT

Power Supply Section for HEWMXJ, HLXJ and HEMXJ Types.


TR 2 UNIT
POWER TRANS FORMER
TR 1 UNIT
CMKS-P3X
AC 230-240V
AC 220-230V
RWZ3465
AC POWER CORD
AC 230-240V
50/60Hz

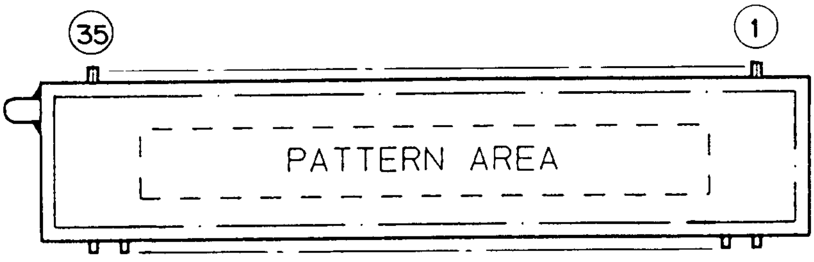
Power Supply Section for HBWXJ Type.


VOLTAGE SELECTOR
240V
220V
120-127V
110V
POWER TRANS FORMER
CMKS-P3X
RWZ3465
AC POWER CORD
AC110V/120-127V/220V/240V
50/60Hz
TR 1 UNIT (RWZ3218)

Power Supply Section for SDXJ Type.

5. FL INFORMATION

■ RAW1124 (V1501)



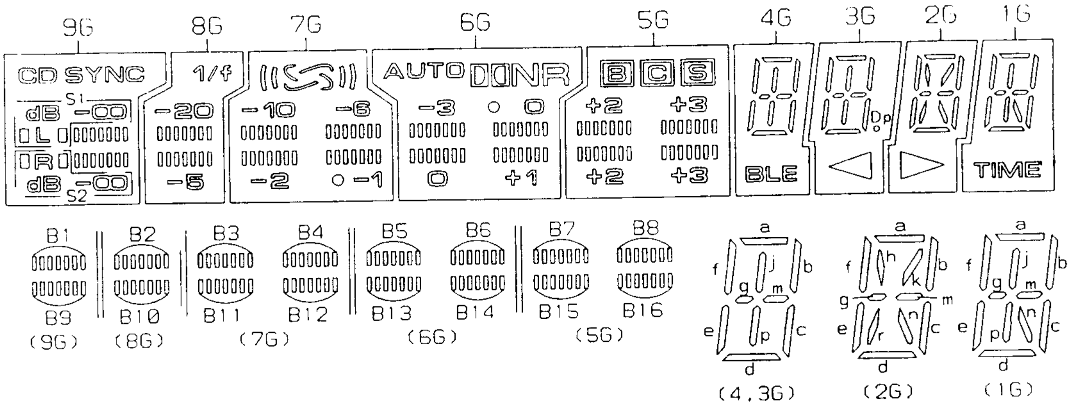
㉟
①
PATTERN AREA

Pin Connection

PIN NO.	35	34	33	32	31	30	29	28	27	26	25	24	23	22	21	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1
CONNECTION	F2	F2	NP	P1	P2	P3	P4	P5	P6	P7	P8	P9	P10	P11	NP	NP	NP	NP	NP	NP	NP	NP	NP	9G	8G	7G	6G	5G	4G	3G	2G	1G	NP	F1	F1

NOTE 1) F1,F2 --- Filament
2) NP ------- No pin
3) DL ------- Datum Line
4) 1G~9G --- Grid

Grid Assignment



9G
8G
7G
6G
5G
4G
3G
2G
1G
CD SYNC
S1
dB
-∞
L
R
dB
S2
-∞
1/f
-20
-5
-10
-6
-2
0 -1
AUTO
DNR
-3
0
0
+1
B
C
S
+2
+3
+2
+3
Dp
BLE
◁
▷
TIME
B1
B2
B3
B4
B5
B6
B7
B8
B9
B10
B11
B12
B13
B14
B15
B16
(9G)
(8G)
(7G)
(6G)
(5G)
a
b
c
d
e
f
g
j
m
p
h
k
n
r
(4,3G)
(2G)
(1G)

Anode Connection

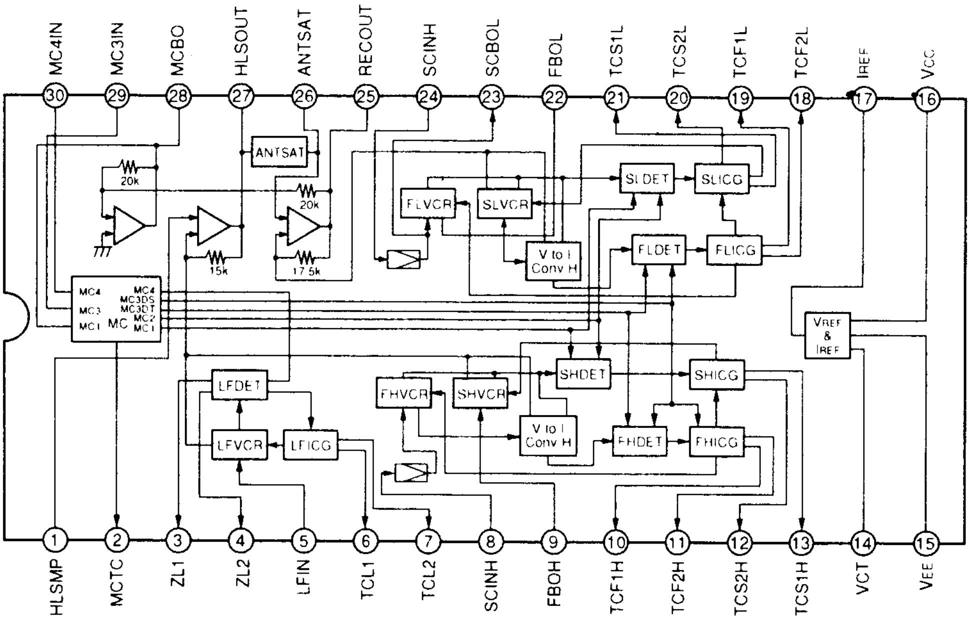
	9G	8G	7G	6G	5G	4G	3G	2G	1G
P1	B1	B2	B3	B5	B7	a	a	a	a
P2	-	-	B4	B6	B8	b	b	b	b
P3	B9	B10	B11	B13	B15	f	f	f	f
P4	-	-	B12	B14	B16	g	g	g, m	g
P5	S1	-20	-10 -6	-3 o 0	+2 +3 (上)	m	m	k, r	m
P6	S2	-5	-2 o -1	0 +1	+2 +3 (下)	c	c	c	c
P7	-	-	∽	-	-	e ·	e	e	e
P8	-	-	‹ ›	-	-	d	d	d	d
P9	CD SYNC	1/f	( )	AUTO	B	j, p	j, p	h	j, p
P10	-	-	( )	DNR	C	-	Dp	n	n
P11	-	-	-	-	S	BLE	◁	▷	TIME

4. IC INFORMATION

- The information shown in the list is basic information and may not correspond exactly to that shown in the schematic diagrams.

■ CXA1917S (DOLBY S UNIT, IC1001, IC1002)
DOLBY S TYPE NOISE REDUCTION SYSTEM

● Block Diagram

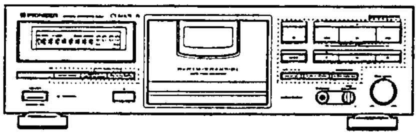

MC4IN
MC3IN
MCBO
HLSOUT
ANTSAT
RECOUT
SCINH
SCBOL
FBOL
TCS1L
TCS2L
TCF1L
TCF2L
IREF
VCC
30
29
28
27
26
25
24
23
22
21
20
19
18
17
16
ANTSAT
20k
20k
15k
17.5k
FLVCR
SLVCR
SLDET
SLICG
V to I Conv H
FLDET
FLICG
MC4
MC3
MC1
MC
MC4
MC3DS
MC3DT
MC2
MC1
VREF & IREF
LFDET
LFVCR
LFICG
FHVCR
SHVCR
SHDET
SHICG
V to I Conv H
FHDET
FHICG
1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
HLSMP
MCTC
ZL1
ZL2
LFIN
TCL1
TCL2
SCINH
FBOH
TCF1H
TCF2H
TCS2H
TCS1H
VCT
VEE

● Pin Function

Pin No.	NAME	FUNCTION
1	HLSMP	HL stage main bus input pin
2	MCTC	MC2 time constant pin
3	ZL1	Weighted pin for HL/LF/FB main band rectifiers
4	ZL2	Input pin for HL/LF/FB bus band rectifiers
5	LFIN	HL/LF/FB stages input pin
6	TCL1	Primary integral time constant pin for HL/LF/FB detectors
7	TCL2	Secondary integral time constant pin for HL/LF/FB detectors
8	SCINH	Input pin for HL/HF side chains
9	FBOH	Output pin for HL/HF/FB VCRs
10	TCF1H	Primary integral time constant pin for HL/HF/FB detectors
11	TCF2H	Secondary integral time constant pin for HL/HF/FB detectors
12	TCS2H	Secondary integral time constant pin for HL/HF/SB detectors
13	TCS1H	Primary integral time constant pin for HL/HF/SB detectors
14	VCT	Dual power supply of + and – → Ground pin Single power supply → VCT pin
15	VEE	Dual power supply of + and – → Negative power supply pin Single power supply → Ground pin
16	VCC	Positive power supply pin
17	IREF	Reference current input pin
18	TCF2L	Secondary integral time constant pin for LL/HF/FB detectors
19	TCF1L	Primary integral time constant pin for LL/HF/FB detectors
20	TCS2L	Secondary integral time constant pin for LL/FB/SB detectors
21	TCS1L	Primary integral time constant pin for LL/HF/SB detectors
22	FBOL	Output pin for LL/HF/FB VCRs
23	SCBOL	Output pin for LL/HF side chain buffer amplifiers
24	SCINL	Input pin for LL/HF side chains
25	RECOUT	Recording (encode) output pin
26	ANTSAT	LL stage main bus input pin
27	HLSOUT	HL stage output pin
28	MCBO	MC buffer feedback pin
29	MC3IN	MC3 input pin
30	MC4IN	MC4 input pin

PIONEER
The Art of Entertainment

Service Manual



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RRV1123

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STEREO CASSETTE DECK

CT-S430S

THIS MANUAL IS APPLICABLE TO THE FOLLOWING MODEL(S) AND TYPE(S).

Type	Model	Power Requirement	The voltage can be converted by the following method.
	CT-S430S		
HBXJ	○	AC230 – 240V	AC220 – 230V, *
HB	○	AC230 – 240V	AC220 – 230V, *
HEM	○	AC220 – 230V	AC230 – 240V, *
HEMXJ	○	AC220 – 230V	AC230 – 240V, *
HEWM	○	AC220 – 230V	AC230 – 240V, *
HEWMXJ	○	AC220 – 230V	AC230 – 240V, *
HL	○	AC220 – 230V	AC230 – 240V, *
HLXJ	○	AC220 – 230V	AC230 – 240V, *
SD	○	AC110V/120 – 127V/220V/240V	With the voltage selector
SDXJ	○	AC110V/120 – 127V/220V/240V	With the voltage selector

* : Alter the wiring of the Power-supply block at the primary winding of power transformer referring to the "Line Voltage Selection" described in Service Manual.

NOTE:
The introduction of CT-S430/HBXJ, HEMXJ, HEWMXJ, HLXJ, and SDXJ was postponed in April, 1994.

CONTENTS

CHAPTER1

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1.2 PANEL FACILITIES 1-3
1.3 IC INFORMATION 1-4
1.4 ADJUSTMENTS 1-7
1.5 PARTS LIST FOR EXPLODED VIEWS AND PACKING 1-11
1.6 PCB PARTS LIST 1-13

CHAPTER2

2.1 BLOCK DIAGRAM 2-2
2.2 EXPLODED VIEWS AND PACKING 2-3
2.3 SCHEMATIC DIAGRAMS 2-7
2.4 PCB CONNECTION DIAGRAM 2-13

PIONEER ELECTRONIC CORPORATION 4-1, Meguro 1-Chome, Meguro-ku, Tokyo 153, Japan
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PIONEER ELECTRONICS OF CANADA, INC. 300 Allstate Parkway Markham, Ontario L3R 0P2 Canada
PIONEER ELECTRONIC [EUROPE] N.V. Haven 1087 Keetberglaan 1, 9120 Melsele, Belgium
PIONEER ELECTRONICS AUSTRALIA PTY. LTD. 178-184 Boundary Road, Braeside, Victoria 3195, Australia TEL: [03] 580-9911

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4200

T – SSK APR. 1994 Printed in Japan

CHAPTER 1

1.1 SPECIFICATIONS

System	4 track, 2-channel stereo
Heads	"Hard Permalloy" recording/playback head × 1 "Ferrite" erasing head × 1
Motor	DC servo motor × 1
Wow and Flutter	0.070% (WRMS, JIS) ±0.18% (DIN)
Fast Winding Time	Approx. 100 seconds (C-60 tape)
Frequency Response (at −20 dB recording level)	
TYPE IV (Metal) tape	25 to 18,000 Hz (±6 dB)
TYPE II (High/CrO_2) Tape	25 to 17,000 Hz (±6 dB)
TYPE I (Normal) Tape	25 to 17,000 Hz (±6 dB)
Signal-to-Noise Ratio (Dolby NR OFF)	
Dolby NR off	More than 57 dB
Noise Reduction Effect	
Dolby B-type NR ON	More than 10 dB (at 5 kHz)
Dolby C-type NR ON	More than 19 dB (at 5 kHz)
Dolby S-type NR ON	More than 22 dB (at 5 kHz) (CT-S430S only)
Harmonic Distortion	No more than 1.0% (at −4 dB: 160 nwb/m)
Input (Sensitivity)	
LINE (INPUT)	100 mV (Input impedance 67 kΩ)
Output (Reference level)	
LINE (OUTPUT)	0.5 V (Output impedance 2.2 kΩ)
Headphone (PHONES)	1.33 mW (Load Impedance 32 Ω)

Miscellaneous

Power requirements	
U.K., model	AC 230—240 Volts~, 50/60 Hz
Australian model	AC 240V, 50/60 Hz
Power consumption	16 W
Dimensions	420 (W)×125 (H)×280 (D) mm
Weight (without package)	
U.K. model and Australian model	3.8 kg

Subfunctions

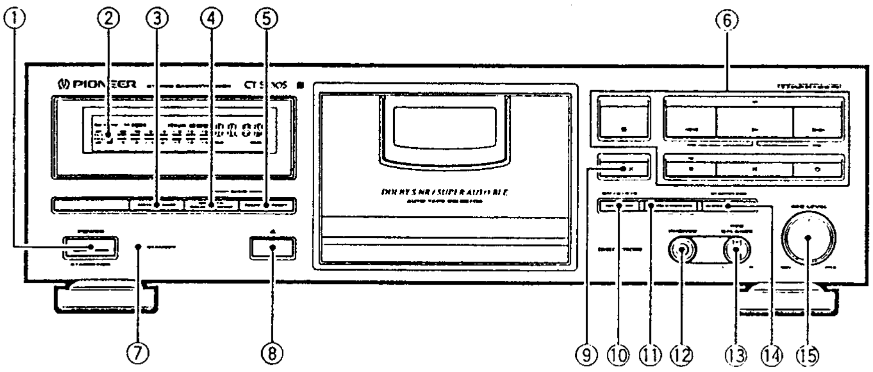
- Dolby B-type, C-type and S-type NR systems (CT-S430S)
- Dolby B-type and C-type NR Systems (CT-S330)
- DOLBY HX PRO system
- Auto tape selector (TYPE I, II, IV)
- Headphones jack
- 4-digit electronic tape/time counter
- Music search up to ±15 selections
- Automatic space recording mute
- SUPER AUTO BLE tuning system
- FL level meter 7 + 1 segments (with peak hold)
- SR System remote control available
- CD · DECK SYNCHRO function
- FLEX system
- Display off
- Last memory
- Timer play

Accessories

Operating instructions	1
Connection cord with pin plugs	2
SR Remote control cord	1
CD · DECK SYNCHRO control cord	1

NOTE:
Specifications and design subject to possible modifications without notice, due to improvements.

1.2 PANEL FACILITIES



- The above illustration shows CT-S430S.

① **POWER STANDBY/ON switch**
The POWER switch activates the secondary transformer only. Even when the switch is in the STANDBY position, there will be a power flow to the deck's circuits as long as the power cord is connected to a power outlet.

② **Function display**

③ **Level meter range selector button (METER RANGE)**
Press to select wide or expanded range on the level meter.

④ **Display off/Tape counter mode button (DISP OFF/ COUNTER MODE)**
Press to select the tape counter mode, the time counter mode, or to turn the function display off. Press the button to choose between the modes or to turn the display off.

→ Display off → Display on → Display on
(Tape counter) (Tape counter) (Time counter)

⑤ **Tape counter reset button (COUNTER RESET)**

⑥ **Operation buttons**

◀◀/MS : Rewind/music search
■ : Stop
▶ : Playback
▶▶/MS : Fast forward/music search
● : Recording
❚❚ : Pause
○ : Recording mute

⑦ **STANDBY indicator**

⑧ **Eject button (⏏)**

- If the tape is moving (recording, playback, tape winding, etc.), press the stop (■) button before pressing this button.

⑨ **FLEX button**

⑩ **Dolby* NR button (OFF/B/C/S) (CT-S430S)**
Dolby* NR button (OFF/B/C) (CT-S330)

For the CT-S430S — For the CT-S330
→ OFF → B → C → S — → OFF → B → C

*
- *Dolby noise reduction and HX Pro headroom extension manufactured under license from Dolby Laboratories Licensing Corporation. HX Pro originated by Bang & Olufsen.*
- *"DOLBY", the double-D symbol ᗡᗞ and "HX PRO" are trademarks of Dolby Laboratories Licensing Corporation.*

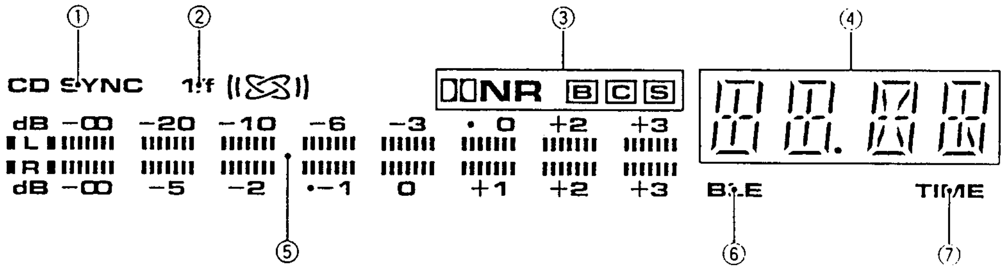
⑪ **CD · DECK SYNCHRO recording button (CD SYNCHRO)**

⑫ **Headphones jack (PHONES)**

⑬ **Recording balance control (REC BALANCE)**

⑭ **SUPER AUTO BLE button**

⑮ **Recording level control (REC LEVEL)**



- The above illustrations shows CT-S430S.

① **CD · DECK SYNCHRO indicator (CD SYNC)**
Lights when synchro recording from a CD player is being carried out.

② **FLEX indicator (1/f)**
This indicator lights when the FLEX button is pressed.

③ **DOLBY NR B/C/S indicator (CT-S430S)**
DOLBY NR B/C indicator (CT-S330)

④ **Counter indicator**
Normally the tape number or time counter is displayed. Flashes for four seconds after the power cord is connected to the power supply.

⑤ **Level meter with peak hold function**
The ● beside the −1 dB mark (at Expand mode) or 0 dB mark (at Wide mode) indicates the Dolby NR systems reference level.
Meter range:
Wide mode: −20 dB to +3 dB
Expand mode: −5 dB to +3 dB

- Selected meter range is shown on the function display by pressing the METER RANGE button.

⑥ **BLE indicator**

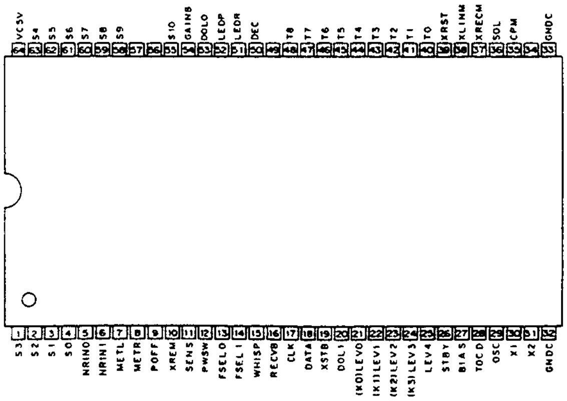
⑦ **TIME counter indicator**
Lights up in the time counter mode.

1.3 IC INFORMATION

- The information shown in the list is basic information and may not correspond exactly to that shown in the schematic diagrams.

■ PD4508A (MAIN UNIT, IC501)

● Pin Arrangement (Top view)


64 VC5V
63 S4
62 S5
61 S6
60 S7
59 S8
58 S9
57
56
55 S10
54 GAINB
53 DOLO
52 LEOP
51 LEOR
50 DEC
49
48 T8
47 T7
46 T6
45 T5
44 T4
43 T3
42 T2
41 T1
40 TO
39 XRST
38 XLINM
37 XRECM
36 SOL
35 CPM
34
33 GNDC
1 S3
2 S2
3 S1
4 SO
5 NRINO
6 NRIN1
7 METL
8 METR
9 POFF
10 XREM
11 SENS
12 PWSW
13 FSELO
14 FSEL1
15 WHISP
16 RECVB
17 CLK
18 DATA
19 XSTB
20 DOL1
21 (KO)LEVO
22 (K1)LEV1
23 (K2)LEV2
24 (K3)LEV3
25 LEV4
26 STBY
27 BIAS
28 TOCD
29 OSC
30 X1
31 X2
32 GNDC

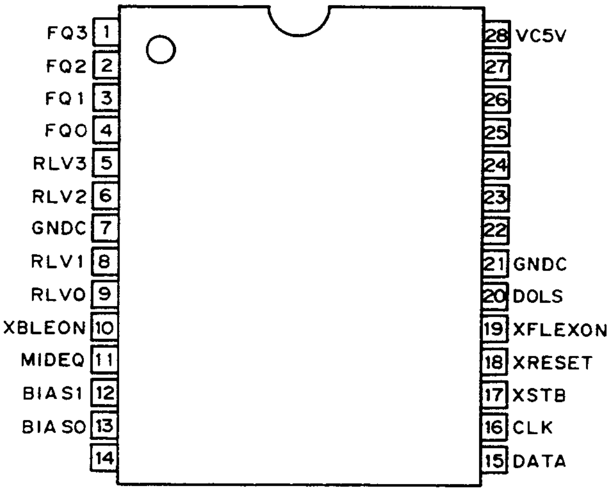
● Pin Function

Pin No.	Name	I/O	Function
1	S3	O	Segment output, key scan output.
2	S2	O	
3	S1	O	
4	S0	O	
5	NRINO	I	Not used.
6	NRIN1	I	
7	METL	I	Level detection input, Lch.
8	METR	I	Level detection input, Rch.
9	POFF	I	POWER OFF input. "H":Active.
10	XREM	I	Remote commander input. "L":Active.
11	SENS	I	Sensing pulse input
12	PWSW	I	POWER SW input
13	FSEL0	O	AUTO BLE frequency select output (3 KHz)
14	FSEL1	O	AUTO BLE frequency select output (10 KHz)
15	XHISP	O	2× speed select output during AUTO BLE. "L":2× speed.
16	XRECVB	O	Meter circuit time constant switching output. "L":FAST, "H":SLOW.
17	CLK	O	Expansion IC clock output and memory IC clock output
18	DATA	I, O	Expansion IC data output and memory IC data input/output
19	XSTB	O	Expansion IC strobe output. "L" during communication output.
20	DOL1	O	DOLBY switching output 1
21	LEVEL0 (K0)	O I	Level scan output. Key scan input.
22	LEVEL1 (K1)	O I	Level scan output. Key scan input.
23	LEVEL2 (K2)	O I	Level scan output. Key scan input.
24	LEVEL3 (K3)	O I	Level scan output. Key scan input.
25	LEVEL4	O	Level scan output.

Pin No.	Name	I/O	Function
26	STBY	O	STANDBY display output
27	BIAS	O	BIAS oscillation output
28	TOCD	O	CD SYNC output
29	OSC	O	AUTOBLE 400/3K/10 KHz square wave output
30	X1	–	Crystal/ceramic connection for main system clock oscillation
31	X2	–	
32	GNDC	–	GND
33	(XT1)	–	Crystal connection for subsystem clock oscillation. GND.
34	(XT2)	–	Crystal connection for subsystem clock oscillation. Not used.
35	CPM	O	Capstan motor driving
36	SOL	O	Solenoid driving
37	XRECMT	O	Record mute output. "L":ON.
38	XLINMT	O	Line mute output. "L":ON.
39	XRST	I	System reset input. "L":Active.
40	T0	O	FL display grid output
41	T1	O	
42	T2	O	
43	T3	O	
44	T4	O	
45	T5	O	
46	T6	O	
47	T7	O	
48	T8	O	
49	–	–	Not used.
50	DEC	O	DECODE/ENCODE output. "H":DECODE, "L":ENCODE.
51	LEDR	O	Output for displaying playback system running
52	LEDP	O	Output for displaying record system running
53	DOLO	O	DOLBY switching output 0
54	GAINB	O	FLEX IC gain switching output
55	S10	O	Segment output
56	VLOAD	–	Connected to pull-down resistor for FL controller/driver
57	VPRE	–	Output buffer power supply for FL controller/driver
58	S9	O	Segment output
59	S8	O	Segment output, key scan output.
60	S7	O	
61	S6	O	
62	S5	O	
63	S4	O	
64	VC5V	–	+ 5V power supply

■ NJU3718L (MAIN UNIT, IC502)

● Pin Arrangement (Top view)


FQ3 1
FQ2 2
FQ1 3
FQ0 4
RLV3 5
RLV2 6
GNDC 7
RLV1 8
RLV0 9
XBLEON 10
MIDEQ 11
BIAS1 12
BIAS0 13
14
28 VC5V
27
26
25
24
23
22
21 GNDC
20 DOLS
19 XFLEXON
18 XRESET
17 XSTB
16 CLK
15 DATA

● Pin Functions

Pin No.	Name	Function
1	FQ3	Output BIT 3 for compensating AUTO BLE HIGH EQ
2	FQ2	Output BIT 2 for compensating AUTO BLE HIGH EQ
3	FQ1	Output BIT 1 for compensating AUTO BLE HIGH EQ
4	FQ0	Output BIT 0 for compensating AUTO BLE HIGH EQ
5	RLV3	Output BIT 3 for compensating AUTO BLE LEVEL
6	RLV2	Output BIT 2 for compensating AUTO BLE LEVEL
7	GNDC	GND
8	RLV1	Output BIT 1 for compensating AUTO BLE LEVEL
9	RLV0	Output BIT 0 for compensating AUTO BLE LEVEL
10	XBLEON	AUTO BLE ON output. "L":ON during BLE.
11	MIDEQ	Output for compensating AUTO BLE MID EQ
12	BIAS1	Output BIT 1 for compensating AUTO BLE BIAS
13	BIAS0	Output BIT 0 for compensating AUTO BLE BIAS
14	–	Not used.
15	DATA	Serial data signal input
16	CLK	Clock signal input
17	XSTB	Strobe signal input
18	XRST	System reset input. "L":Active.
19	XFLEX ON	Flex IC ON output. "L" during FLEX ON.
20	DOLS	Dolby S ON output
21	GNDC	GND
22 to 27	–	–
28	VC5	+5V power supply

■ AT24C01-10PC (MAIN UNIT, IC505)

● Pin Functions

Pin No.	Name	Function
1	NC	Not used.
2		
3		
4	GND	GND
5	DATM	Serial data signal input/output
6	CLKM	Clock signal input
7	NC	Connected to GND.
8	VCC	5V power supply

1.4 ADJUSTMENTS

1. MECHANICAL ADJUSTMENT

1. Tape speed Adjustment			
Mode	Test tape	Adjustment position	Specification rating (playback frequency)
PLAY	Play the STD–301 tape (3kHz)	VR852	3000Hz ± 5Hz

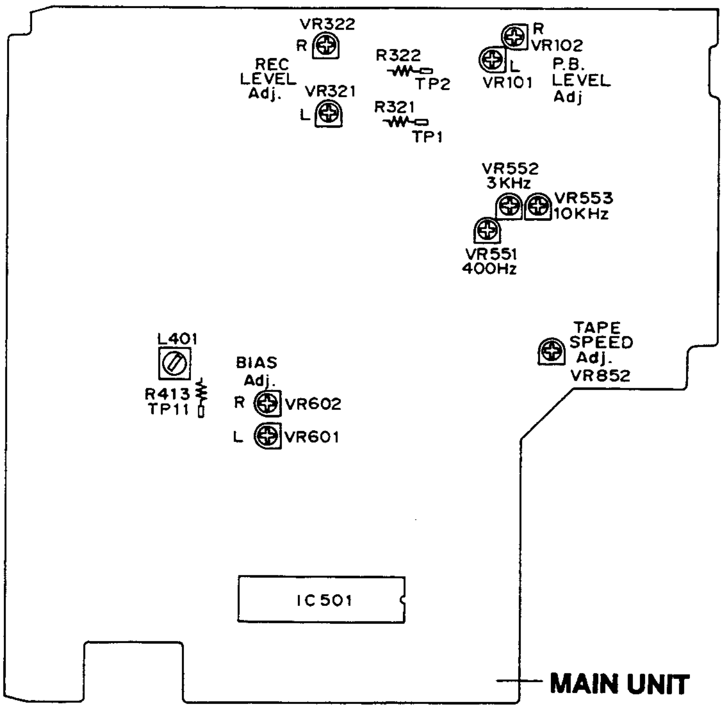
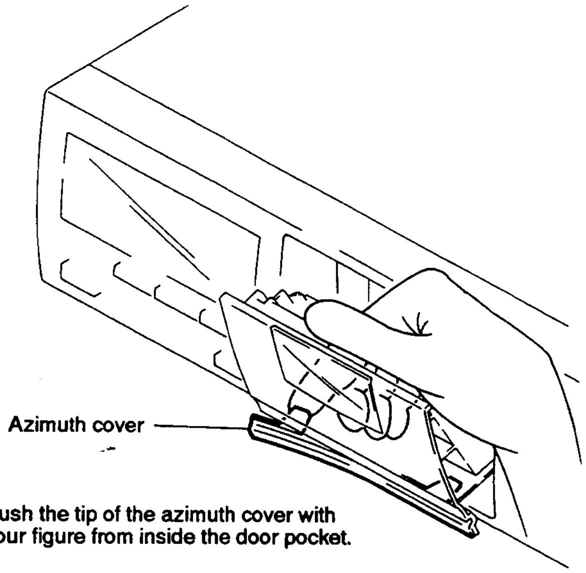

VR322
R
REC
LEVEL
Adj.
VR321
L
R322
TP2
R321
TP1
R
VR102
L
VR101
P.B.
LEVEL
Adj
VR552
3KHz
VR553
10KHz
VR551
400Hz
L401
R413
TP11
BIAS
Adj.
R
VR602
L
VR601
TAPE
SPEED
Adj.
VR852
IC501
MAIN UNIT

Fig. 1 Adjusting points

● Before performing the head azimuth adjustment

Remove the azimuth cover before performing this adjustment.


Azimuth cover

Push the tip of the azimuth cover with your figure from inside the door pocket.

Fig. 2 Removal of azimuth cover

2. ELECTRICAL ADJUSTMENTS

Adjustment Conditions

1. The mechanical adjustments must be completed first.
2. The head must be cleaned and demagnetized.
3. Turn power on allow the deck to warm up for at least a few minutes before commencing any electrical adjustments.
4. The reference signal is 0 dBV=1 Vrms.
5. Connect a 10 kΩ load resistance to the OUTPUT terminals.
6. Unless otherwise specified, the switches listed below are left in the positions indicated.

DOLBY NR : OFF
TAPE SELECTOR : NORM

Test Tapes

STD–331E	: Playback adjustments (See Fig. 3)
STD–631 or STD–632	: NORMAL blank tape
STD–621	: CrO2 blank tape
STD–610	: METAL blank tape

* As the reference recording level is 250 nwb/m for STD–331E, the recording level will be higher by 4 dB for STD–331B (160 nwb/m). When adjusting, pay carefull attention to the type of tape used.

List of Adjustments

Playback sections

1. Head azimuth adjustment.
2. Playback level adjustment.

Recording sections

1. Bias oscillator adjustment.
2. Recording bias adjustment.
3. Recording level adjustment.
4. Level meter check
5. AUTO BLE adjustment.

NOTE: This unit has an automatic tape selection feature.

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"DOLBY",the double-D symbol ᗡᗞ and "HX PRO"are trademarks of Dolby Laboratories Licensing Corporation.

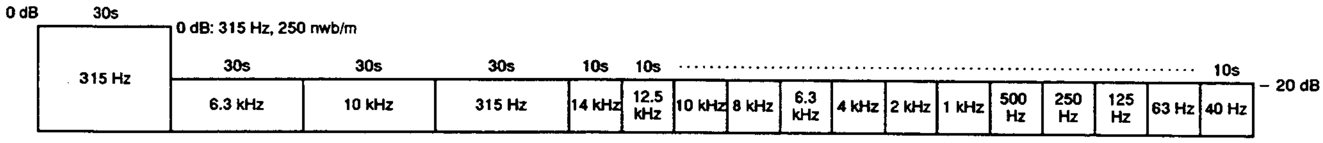
0 dB
30s
0 dB: 315 Hz, 250 nwb/m
315 Hz
30s
30s
30s
10s
10s
10s
6.3 kHz
10 kHz
315 Hz
14 kHz
12.5 kHz
10 kHz
8 kHz
6.3 kHz
4 kHz
2 kHz
1 kHz
500 Hz
250 Hz
125 Hz
63 Hz
40 Hz
– 20 dB

Fig. 3 Constants of the test tape STD–331E

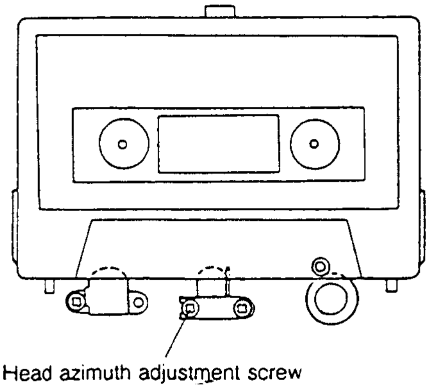
Head azimuth adjustment screw

Fig. 4 Head azimuth adjustment

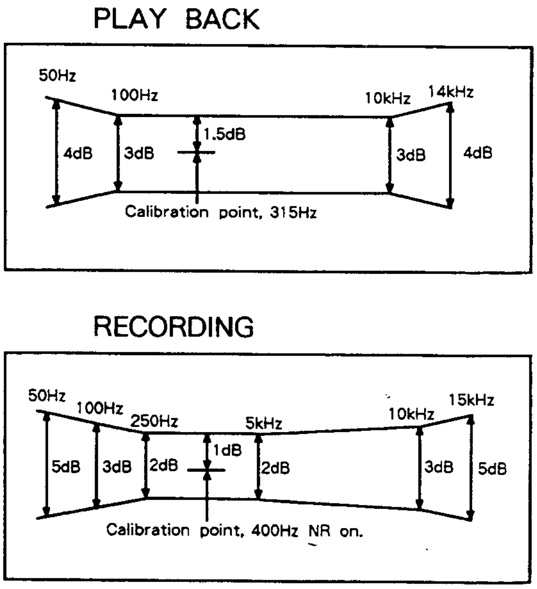

Fig. 5 Frequency response zone

PLAYBACK SECTION

1. Head Azimuth Adjustment

- Turn VR101, 102 to mechanical center positions.

No.	Mode	Input signal & test tape	Adjustment location	Measuring location	Adjustment value	Remarks
1.	PLAY	Play the 10 kHz/–20 dB section of STD–331E test tape.	Head azimuth adjustment screw. (See Fig. 4)	LINE OUT	Maximum playback signal level.	
2.	STOP	Lock the screw with screw lock after completing adjustment.				

2. Playback Level Adjustment

- This adjustment determines the DOLBY NR level, and must be performed with great care.

No.	Mode	Input signal & test tape	Adjustment location		Measuring location	Adjustment value	Remarks
1.	PLAY	Play the 315 Hz/0 dB section of the STD–331E test tape.	Deck	VR101 (Lch) VR102 (Rch)	TP. 1 (Lch) TP. 2 (Rch)	–6.7 dBV	This adjustment must be performed accurately for proper Dolby level setting.

RECORDING SECTION

1. Bias Oscillator Adjustment

No.	Mode	Input signal & test tape	Adjustment location		Measuring location	Adjustment value	Remarks
1.	REC	Load the STD–610 test tape with no input signal.	Deck	L401	TP. 11	105 kHz ± 0.3 kHz	

2. Recording Bias Adjustment

- After the adjustment, caution should be exercised so as not to become under bias by checking the distortion rate.

No.	Mode	Input signal & test tape	Adjustment location		Measuring location	Adjustment value	Remarks
1.	REC	Load the STD–631 or STD–632 test tape. Record the 315 Hz and 6.3 kHz signals at –26 dBV input level and playback.	Deck	VR601 (Lch) VR602 (Rch)	LINE OUT	Repeatedly record, playback and adjust so that the playback level of 6.3 kHz signal becomes + 0.5dB ± 0.5 dB when compared with the 315 Hz signal.	

3. Recording Level Adjustment

No.	Mode	Input signal & test tape	Adjustment location		Measuring location	Adjustment value	Remarks
1.	REC/ PAUSE	Apply a 315 Hz signal to the line input terminals, load the STD–631 or STD–632 test tape.	Volume of the output level of the oscillator		TP. 1 (Lch) TP. 2 (Rch)	–11.2 dBV	
2.	REC/ PLAY	Record the above signal onto the STD–631 or STD–632 test tape, and playback.	Deck	VR321 (Lch) VR322 (Rch)		Repeatedly record, playback and adjust so that the playback signal level becomes –11.2dBV.	
3.	REC/ PLAY	Record the above signal onto the STD–621 test tape, and playback.	Check			–11.2 dBV ± 1.5 dB	
4.	REC/ PLAY	Record the above signal onto the STD–610 test tape, and playback.	Check			–11.2 dBV ± 1.5 dB	

4. Level Meter Check

No.	Mode	Input signal & test tape	Adjustment location	Measuring location	Adjustment value	Remarks
1.	REC/ PAUSE	Apply a 315 Hz signal to the line input terminals.	Volume of the output level of the oscillator	TP. 1 (Lch) TP. 2 (Rch)	Check that the level meters "0 dB" light up within –7.2 dBV ± 2 dB of the signal output level.	

5. AUTO BLE Adjustment

- BLE adjustment should be performed after all other adjustments are completed.
- This adjustment should be performed in the test mode.
- Entering the Test Mode.
  Turn on the power, and after more than 4 seconds, press the "COUNTER RESET" button, "COUNTER MODE" button and ▮▮ (PAUSE) button simultaneously.
- Releasing the Test Mode.
  Press the "COUNTER RESET" button.

No.	Mode	Input signal & test tape	Adjustment location	Measuring location	Adjustment value	Remarks
1.		Set to test mode.	–	–	–	
2.	–	Press the AUTO BLE key on the front panel.	VR551	Level meter Rch	Adjust the Lch segment which is lit until Rch is not lighting up. Lch ■→□ Rch ■■□■■ (■ : light up □ : not light up)	400 Hz adjustment (Test mode 1 FL indication 1)
3.		Press the AUTO BLE key on the front panel.	VR552			3 kHz adjustment (Test mode 2 FL indication 2)
4.		Press the AUTO BLE key on the front panel.	VR553			10 kHz adjustment (Test mode 3 FL indication 3)

1.5 PARTS LIST FOR EXPLODED VIEWS AND PACKING

NOTES:

- Parts marked by "NSP" are generally unavailable because they are not in our Master Spare Parts List.
- The ⚠ mark found on some component parts indicates the importance of the safety factor of the part. Therefore, when replacing, be sure to use parts of identical designation.
- Parts marked by "⊙" are not always kept in stock. Their delivery time may be longer than usual or they may be unavailable.

1. EXTERIOR AND PACKING

■ CONTRAST OF HBXJ, HB, HEM, HEWM, HEWMXJ, HL, HLXJ, HEMXJ, SD AND SDXJ TYPES

HBXJ, HB, HEM, HEWM, HEWMXJ, HL, HLXJ, HEMXJ, SD and SDXJ have the same construction except for the following:

Mark	No.	Symbol & Description	Part No.									
			HBXJ type	HB type	HEM type	HEWM type	HEWMXJ type	HL type	HLXJ type	HEMXJ type	SD type	SDXJ type
NSP	4	TRN 1 unit	RWZ3298	RWZ3298	RWZ3217	RWZ3217	RWZ3217	RWZ3217	RWZ3217	RWZ3217	RWZ3218	RWZ3218
NSP	5	TRN 2 unit	RWZ3220	RWZ3220	Not used	Not used	Not used	Not used	Not used	Not used	Not used	Not used
⚠	9	Power Transformer (AC220–230/230–240V)	RTT1254	RTT1254	RTT1254	RTT1254	RTT1254	RTT1254	RTT1254	RTT1254	Not used	Not used
⚠	9	Power Transformer (AC110/120–127/220/240V)	Not used	Not used	Not used	Not used	Not used	Not used	Not used	Not used	RTT1255	RTT1255
⚠	10	Power cord with HB plug	PDG1055	PDG1055	Not used	Not used	Not used	Not used	Not used	Not used	Not used	Not used
⚠	10	Power cord with HE plug	Not used	Not used	PDG1003	PDG1003	PDG1003	PDG1003	PDG1003	PDG1003	Not used	Not used
⚠	10	Power cord with SD plug	Not used	Not used	Not used	Not used	Not used	Not used	Not used	Not used	PDG1013	PDG1013
NSP	16	Main chassis	RNB1100	RNB1090	RNB1090	RNB1090	RNB1100	RNB1090	RNB1100	RNB1100	RNB1090	RNB1100
	32	FL lens	RAH2413	RAH2413	RAH2413	RAH2413	RAH2413	RAH2414	RAH2414	RAH2413	RAH2414	RAH2414
	35	Rear panel	RNA1818	RNA1847	RNA1848	RNA1848	RNA1814	RNA1822	RNA1840	RNA1814	RNA1820	RNA1838
	45	Pin cap	VEC1616	VEC1616	Not used	Not used	Not used	Not used	Not used	Not used	Not used	Not used
⚠	48	Voltage selector	Not used	Not used	Not used	Not used	Not used	Not used	Not used	Not used	PSB1002	PSB1002
⚠	49	Fuse (T5A)	PEK1003	PEK1003	Not used	Not used	Not used	Not used	Not used	Not used	Not used	Not used
	67	Connection cord with mini plug	PDE-319	PDE1247	PDE1247	PDE1247	PDE-319	PDE1247	PDE-319	PDE-319	PDE-319	PDE-319
	57	Control cord	RDE1030	RDE1038	RDE1038	RDE1038	RDE1030	RDE1038	RDE1030	RDE1030	RDE1030	RDE1030
	58	Operating instructions (English)	RRB1146	RRB1146	Not used	Not used	Not used	Not used	Not used	Not used	Not used	Not used
	58	Operating instructions (English, French, German, Italian, Dutch, Swedish, Spanish, Portuguese)	Not used	Not used	RRE1101	Not used	Not used	Not used	Not used	RRE1101	Not used	Not used
	58	Operating instructions (German)	Not used	Not used	Not used	RRD1150	RRD1150	Not used	Not used	Not used	Not used	Not used
	58	Operating instructions (English, Spanish, Chinese)	Not used	Not used	Not used	Not used	Not used	RRE1102	RRE1102	Not used	RRE1102	RRE1102
	61	Packing case	RHG1572	RHG1593	RHG1609	RHG1609	RHG1571	RHG1574	RHG1580	RHG1613	RHG1573	RHG1582
	65	Pad spacer A	RHC1039	RHC1039	Not used	Not used	Not used	Not used	Not used	Not used	Not used	Not used
	66	Pad spacer B	RHC1041	RHC1041	Not used	Not used	Not used	Not used	Not used	Not used	Not used	Not used

■ PARTS LIST FOR HBXJ TYPE

Mark	No.	Description	Part No.
	1	Main unit	RWZ3208
	2	Dolby S unit	RWX1101
	3	OPSW unit	RWZ3211
NSP	4	TRN 1 unit	RWZ3298
NSP	5	TRN 2 unit	RWZ3220
	6	FL unit	RWZ3214
⚠	7	Strain relief	CM – 22B
⚠	8	Fuse FU1001, FU1002 (T1.0A)	REK1022
⚠	9	Power transformer	RTT1254
⚠	10	Power cord with HB plug	PDG1055
	11	Mechanism unit	RYM1226
	12	Door spring L	RBH1384
	13	Half pressure spring	RBK1004
	14	LED lens	PNW2019
	15	Damper assy	REC1005
NSP	16	Main chassis	RNB1100
	17	Cord clamper	RNH – 184
	18	Indicator lens S	RNK1911
	19	Insulator	PNW1912
	20	Balance knob	RAC1705
	21	VR knob	RAC1707
	22	Eject spring L	RBH1379
	23	Operation knob	RAC1795

Mark	No.	Description	Part No.
	24	Eject knob	RAC1906
	25	Power konb	RAC1809
	26	Door lens	RAH2171
	27	Mode knob A	RAC1907
	28	Name plate	RAM1007
NSP	29	Eject collar	RLA1283
	30	Indication panel	REE – 113
NSP	31	Arm collar	RLA1290
	32	FL lens	RAH2413
	33	Door pocket	RAH2443
	34	Front panel	RAH2411
	35	Rear panel	RNA1818
	36	Bonnet	REA1077
	37	Eject spring	RBH1340
	38	Washer	WA52D120D025
NSP	39	PCB spacer	PNY – 404
	40	Eject arm L	RNE1763
	41	Eject lever L	RNK2045
	42	Connector assy 3P	RKP1672
	43	Connector assy 2P	RKP1681
	44	Azimuth cover	RAH2431
	45	Pin cap	VEC1616
	46	Binder	Z09 – 058
NSP	47	Earth lead assy	RDF1089
	48	......	
⚠	49	Fuse (T5A)	PEK1003
	50	Screw	BBZ30P080FMC
	51	Screw	IBZ30P150FCU
	52	Screw	BSZ26P120FMC
	53	Screw	ABZ30P080FMC
	54	Screw	IPZ26P080FMC
	55	Screw	BCZ26P050FMC
	56	Connection cord assy	RDE1036
	57	Control cord	RDE1030
	58	Operating instructions (English)	RRB1146
	59	Pad (L)	RHA1111
	60	Pad (R)	RHA1112
	61	Packing case	RHG1572
	62	Sheet	RHX – 034
	63	Spacer A	RHC1044
	64	......	
	65	Pad spacer A	RHC1039
	66	Pad spacer B	RHC1041
	67	Connection cord with mini plug	PDE – 319

2. MECHANISM UNIT

Mark	No.	Description	Part No.
	1	Plunger	RLA1288
	2	PCB Control BLK	RXA1625
	3	Push Switch	RSG1018
	4	SPLF	RSN1023
	5	Photo – Transistor	SPI33534FG
	6	MTR Main BLK	RXM1075
	7	Solenoid BLK	RXP1021
	8	Spring Interlock L	RBH1385
	9	Arm Interlock L	RNE1780
	10	Chassis Base BLK	RXA1627
	11	Spring Brake	RBH1387
	12	Main Belt	REB1163
	13	F/R Belt	REB1254
	14	Lever Brake	RNK2071
	15	E Head	RPB1040
	16	Pinch Roller BLK R	RXA1630
	17	Head Spacer	RNK1631
	18	Clutch Assy BLK	RXA1631
	19	Screw	RBA1113
	20	Washer 2.1 × 0.25T	RBF1038
	21	Spring Reel (L)	RBH1388
	22	Spring Reel (R)	RBH1389
	23	Cam Spring	RBH1393
	24	Spacer	RLA1286
	25	Lever F/R	RNE1782
	26	Reel Feather	RNK2072
	27	Reel Base	RNK2073
	28	Play Gear (A)	RNK2074
	29	FF Gear (A)	RNK2075
	30	F/R Pulley	RNK2076
	31	Clutch Assy BLK	RXA1632
	32	Washer	WA17D040D025
	33	Washer	WA23F060M040
	34	Spring (Azimuth)	RBH1076
	35	F Lock Screw	RBA1031
	36	Spring HB	RBH1390
	37	Head Base	RNE1784
	38	R/P Head	RPB1056
	39	Stop Ring	YE15FUC
	40	Screw	RBA1113
	41	Washer 2.0 × 0.3	RBE1009
	42	Spring Arm Play	RBH1391
	43	Spacer	RLA1286
	44	Washer	WA26D047D050
	45	Cam Gear	RNK2078
	46	Arm Play	RNK2079
	47	Spring Cassette	RNE1786
	48	Screw	BMZ26P040FZK
	49	Washer	WA26D045D025

1.6 PCB PARTS LIST

NOTES:

- Parts marked by "NSP" are generally unavailable because they are not in our Master Spare Parts List.
- The ⚠ mark found on some component parts indicates the importance of the safety factor of the part. Therefore, when replacing, be sure to use parts of identical designation.
- Parts marked by "⊙" are not always kept in stock. Their delivery time may be longer than usual or they may be unavailable.
- When ordering resistors, first convert resistance values into code form as shown in the following examples.

Ex.1 When there are 2 effective digits (any digit apart from 0), such as 560 ohm and 47k ohm (tolerance is shown by J=5%, and K=10%).

560 Ω → 56 × 10^1 → 561 ································ RD1/8PM$\boxed{5}\boxed{6}\boxed{1}$J
47k Ω → 47 × 10^3 → 473 ································ RD1/4PS$\boxed{4}\boxed{7}\boxed{3}$J
0.5 Ω → 0R5 ································ RN2H$\boxed{0}\boxed{R}\boxed{5}$K
1 Ω → 010 ································ RS1P$\boxed{0}\boxed{1}\boxed{0}$K

Ex.2 When there are 3 effective digits (such as in high precision metal film resistors).

5.62k Ω → 562 × 10^1 → 5621 ································ RN1/4PC$\boxed{5}\boxed{6}\boxed{2}\boxed{1}$F

LIST OF WHOLE PCB ASSSEMBLIES

Mark	PCB Assemblies	Part No.									
		HBXJ type	HB type	HEM type	HEWM type	HEWMXJ type	HL type	HLXJ type	HEMXJ type	SD type	SDXJ type
NSP	Mother unit	RWM1697	RWM1697	RWM1693	RWM1693	RWM1693	RWM1693	RWM1693	RWM1693	RWM1695	RWM1695
	├Main unit	RWZ3208	RWZ3208	RWZ3208	RWZ3208	RWZ3208	RWZ3208	RWZ3208	RWZ3208	RWZ3208	RWZ3208
	└Dolby S unit	RWX1101	RWX1101	RWX1101	RWX1101	RWX1101	RWX1101	RWX1101	RWX1101	RWX1101	RWX1101
	├OPSW unit	RWZ3211	RWZ3211	RWZ3211	RWZ3211	RWZ3211	RWZ3211	RWZ3211	RWZ3211	RWZ3211	RWZ3211
	├FL unit	RWZ3214	RWZ3214	RWZ3214	RWZ3214	RWZ3214	RWZ3214	RWZ3214	RWZ3214	RWZ3214	RWZ3214
NSP	├TR 2 unit	RWZ3220	RWZ3220	Not used	Not used	Not used	Not used	Not used	Not used	Not used	Not used
NSP	└TR 1 unit	RWZ3298	RWZ3298	RWZ3217	RWZ3217	RWZ3217	RWZ3217	RWZ3217	RWZ3217	RWZ3218	RWZ3218

TRN 1 UNIT

RWZ3298, RWZ3217 and RWZ3218 have the same construction except for the following:

Mark	Symbol & Description	Part No.			Remarks
		RWZ3298	RWZ3217	RWZ3218	
	C1025	CKSQYF223Z50	CKSQYF223Z50	Not used	
⚠	C1033	Not used	Not used	VCG – 044	
⚠	C1031	Not used	VCG – 044	Not used	
⚠	Capacitor cover	Not used	REC – 150	REC – 150	
	Terminal	Not used	Not used	PKC – 027	

■ PARTS LIST FOR HBXJ AND HB TYPES

DOLBY S UNIT

SEMICONDUCTORS

Mark	No.	Description	Part No.
	IC1001, IC1002		CXA1417Q

CAPACITORS

Mark	No.	Description	Part No.
	C1003, C1004, C1015, C1016		CEJA010M50
	C1051, C1052		CEJA010M50
	C1089, C1090		CEJA100M25
	C1085, C1086		CEJA220M25
	C1033, C1034		CEJAR10M50
	C1001, C1002, C1031, C1032		CEJAR22M50
	C1045, C1046, C1091, C1092		CEJAR22M50
	C1027, C1028, C1041, C1042		CEJAR47M50
	C1075, C1076		CEJAR47M50
	C1019, C1020		CFTYA224J50
	C1037, C1038		CFTYA334J50
	C1013, C1014, C1055, C1056		CKSQYB102K50
	C1007, C1008, C1025, C1026		CKSQYB104K25
	C1043, C1044, C1067, C1068		CKSQYB104K25
	C1077, C1078, C1081, C1082		CKSQYB104K25
	C1087, C1088		CKSQYB104K25
	C1023, C1024, C1049, C1050		CKSQYB153K50
	C1065, C1066, C1069-C1072		CKSQYB182K50
	C1083, C1084		CKSQYB182K50
	C1079, C1080		CKSQYB183K50
	C1059, C1060		CKSQYB222K50
	C1009, C1010, C1073, C1074		CKSQYB223K50
	C1093, C1094		CKSQYB333K50
	C1005, C1006, C1061, C1062		CKSQYB393K50
	C1063, C1064		CKSQYB471K50

Mark	No.	Description	Part No.
	C1047, C1048		CKSQYB473K50
	C1011, C1012		CKSQYB681K50
	C1017, C1018, C1053, C1054		CKSQYB822K50
	C1021, C1022, C1039, C1040		CKSQYB823K25
	C1029, C1030, C1035, C1036	(47/16)	RCH1095

RESISTORS

Mark	No.	Description	Part No.
	All Resistors		RS1/10S□□□J

OTHERS

Mark	No.	Description	Part No.
	CN1002	2MM PIN HEADER 7P	6033B-07Z029
	CN1001	2MM PIN HEADER 8P	6033B-08Z029

MAIN UNIT

SEMICONDUCTORS

Mark	No.	Description	Part No.
	IC505		AT24C01-10PC
	IC351		CXA1198AP
	IC251		CXA1563S
	IC1601, IC554, IC701		M5218AFP
	IC101		NJM4580ED
⚠	IC1003		NJM7806FA
⚠	IC1004		NJM78L05A
⚠	IC1005		NJM7906FA
	IC502		NJU3718L
	IC201		PA0059AM
	IC501		PD4508A
	IC1701		TC4050BP
	IC601		UPC1297CA
	IC223		XRA10393F
	Q510		2SA1037K
	Q211, Q421, Q602, Q852		2SA1309A
⚠	Q1001, Q431, Q856		2SB1238X
	Q854		2SB1425
	Q1006, Q1007, Q253, Q254		2SC3311A
	Q351, Q352, Q858		2SC3311A
	Q401, Q402		2SD1302
	Q1603, Q1604, Q353, Q354, Q403		2SD2144S
	Q701, Q702		2SD2144S
	Q553		2SK246
	Q161, Q162		2SK373
	Q1005, Q332, Q501, Q502, Q762		DTA114TS
	Q1010, Q841-Q843		DTA124EK
	Q165		DTA124ES
	Q105, Q106, Q163, Q164, Q210		DTC114TS
	Q901, Q902		DTC114TS
	Q1165, Q507, Q551, Q552		DTC124EK
	Q167, Q168, Q212, Q213		DTC124ES
	Q255-Q260, Q355-Q358, Q422		DTC124ES
	Q432, Q511, Q512, Q603, Q853		DTC124ES
	Q855, Q857		DTC124ES
	Q1151, Q1153, Q1155, Q1157, Q1159		FMG1
	Q1161		FMG1
⚠	D1001, D1009, D1010, D1013-D1016		1SR35-100AVL
⚠	D812		1SR35-100AVL
	D431		1SS252
	D1011, D1017, D1018, D1161, D1162		1SS254
	D1602-D1604, D161, D162		1SS254
	D1620-D1622, D163-D167, D201		1SS254
	D210-D212, D251-D253		1SS254
	D421-D423, D432, D433		1SS254
	D502, D503, D510, D521-D527		1SS254
	D742, D841-D843, D913, D921		1SS254
⚠	D1002		MTZJ27B
	D765		MTZJ3.9B
⚠	D1004		MTZJ7.5B
	D501		MTZJ9.1A

COILS AND FILTERS

Mark	No.	Description	Part No.
	L402		LFA121J
	L401	(105K)	RTD1039
	L601, L602	(105K)	RTD1046
	L351, L352		RTF1102
	F251, F252		RTF1208

CAPACITORS

Mark	No.	Description	Part No.
	C609, C610		CCCSL101K500
	C161, C162		CCSQCH100D50
	C105, C106, C613, C723, C724		CCSQCH101J50
	C359, C360		CCSQCH221J50
	C213, C321, C322, C358, C555		CEAS010M50
	C1016, C111, C112, C201, C202		CEAS100M50
	C408, C617, C707, C708		CEAS100M50
	C103, C104, C210, C214-C216		CEAS101M10
	C261, C262, C721, C722		CEAS101M10
	C1001, C1004		CEAS101M50
	C1010		CEAS102M10
	C1018		CEAS220M16
	C1009, C1012		CEAS331M10
	C131, C132, C1603, C1604, C209		CEAS470M16
	C259, C260, C361, C362		CEAS470M16
	C402, C403, C409, C513, C520		CEAS470M16
	C205, C206, C211, C219		CEAS4R7M50
	C355, C356, C917, C918		CEAS4R7M50
	C614		CEASR10M50
	C203, C204, C287, C288		CFTYA103J50
	C255, C256		CFTYA104J50
	C404		CFTYA223J50
	C257, C258		CFTYA683J50
	C1606, C509, C510, C514, C521		CKCYF103Z50
	C910		CKCYF103Z50
	C1008, C1020-C1022, C1607, C1701		CKCYF473Z50
	C2020, C357, C706		CKCYF473Z50
	C554, C601, C602		CKSQYB103K50
	C503		CKSQYB104K25
	C504		CKSQYB123K50
	C217, C218		CKSQYB222K50
	C505, C552, C605, C606		CKSQYB223K50
	C553		CKSQYB472K50
	C607, C608		CKSQYB473K50
	C851		CKSQYB681K50
	C603, C604		CKSQYB821K50
	C551		CKSQYB823K25
	C769		CKSQYF473Z50
	C405, C406		CQMA332J50
	C407		CQMA472J50

Mark	No.	Description	Part No.
	C101, C102		CQMA681J50
	C109, C110		CQMA682J50
	C401		CQPA822J100
	C860	(2200/16)	PCH1114
	C611, C612	(430P/500)	RCG1005
	C1011	(1000/25)	RCH1113
	C1005, C1006	(2200/25)	RCH1114

RESISTORS

Mark	No.	Description	Part No.
	R502, R503		RA4T223J
	R501		RA4T274J
	R517		RA7T274J
	R321, R322	(560Ω)	RCN1024
	R1702	(11K/22K)	RCX1020
	R413		RD1/2LMF010J
	R1001		RD1/2LMF152J
	R421		RD1/2LMF181J
	R411		RD1/2LMF391J
	R1164, R707, R708, R867		RD1/6PM104J
	R2015, R2016, R265, R266		RD1/6PM112J
	R733, R734, R860		RD1/6PM112J
	R1163, R352, R353		RD1/6PM114J
	R1613, R1614, R715, R716		RD1/6PM152J
	R1003, R1004, R401, R402, R408		RD1/6PM153J
	R351		RD1/6PM154J
	R375, R711, R712		RD1/6PM184J
	R355		RD1/6PM203J
	R111, R112, R201, R350, R354		RD1/6PM223J
	R709, R710, R925, R926		RD1/6PM223J
	R363		RD1/6PM224J
	R775, R776		RD1/6PM241J
	R327, R328		RD1/6PM272J
	R367		RD1/6PM273J
	R261, R262		RD1/6PM302J
	R340, R341		RD1/6PM331J
	R325, R326, R524, R525		RD1/6PM332J
	R741, R742, R851		RD1/6PM332J
	R113, R114, R366, R379		RD1/6PM333J
	R378		RD1/6PM433J
	R1605, R1606		RD1/6PM470J
	R119, R120, R703, R704		RD1/6PM471J
	R207, R208, R323, R324		RD1/6PM472J
	R117, R424, R434, R521-R523		RD1/6PM473J
	R701, R702		RD1/6PM473J
	R101, R102, R109, R110		RD1/6PM474J
	R403		RD1/6PM4R7J
	R203, R204		RD1/6PM512J
	R356		RD1/6PM513J
	R2019, R2020, R855, R865		RD1/6PM561J
	R387, R388		RD1/6PM622J
	R377, R864		RD1/6PM683J
	R267, R268, R393, R394		RD1/6PM822J
	R364, R368, R376, R380		RD1/6PM823J
	R365		RD1/6PM913J
⚠	R1020		RFA1/4L4R7J
	VR101, VR102	(4.7K)	RCP1020
	VR852	(1.0KΩ)	RCP1044
	VR321, VR322, VR551-VR553	(22K)	RCP1046
	VR601, VR602	(22KΩ)	RCP1046
	VR2003		RCS1028
	VR2002		RCV1095
		Other Resistors	RS1/10S☐☐☐J

OTHERS

Mark	No.	Description	Part No.
	CN903	8P JUMPER CONNECTOR	52147-0810
	CN902	10P JUMPER CONNECTOR	52147-1010
	CN1401	11P JUMPER CONNECTOR	52147-1110
	CN901	12P JUMPER CONNECTOR	52147-1210
	CN401	KR CONNECTOR	B2B-PH-K-E
	CN100	KR CONNECTOR	B3B-PH-K-E
	JA1602	MINI JACK	PKN1005
	JA701	4P JACK	RKB-020
	JA2003	HEADPHONE JACK	RKN1002
	JA902, JA903	REMOTE CONTROL JACK	RKN1004
		PCB BINDER	VEF1008
		PCB BINDER	VEF1040
		EARTH PLATE	VNF-091
	X501	CERAMIC RESONATOR (4.19MHz)	VSS1014

OPSW UNIT

SEMICONDUCTORS

Mark	No.	Description	Part No.
	Q1401		DTA114TS
	D1451		SEL6410G
	D1452		SEL6C10R

SWITCHES AND RELAYS

Mark	No.	Description	Part No.
	S1401-S1404, S1406-S1412		RSG1030

RESISTORS

Mark	No.	Description	Part No.
		All Resistors	RD1/6PM☐☐☐J

FL UNIT

SEMICONDUCTORS

Mark	No.	Description	Part No.
	Q1501		DTC124ES
	D1512-D1515, D1526, D1529		1SS254
	D1520		SEL6210S

SWITCHES AND RELAYS

Mark	No.	Description	Part No.
	S1505-S1508		RSG1030

RESISTORS

Mark	No.	Description	Part No.
		All Resistors	RD1/6PM☐☐☐J

OTHERS

Mark	No.	Description	Part No.
	V1501	FL INDICATOR TUBE	RAW1124

TR 2 UNIT

CAPACITORS

Mark	No.	Description	Part No.
⚠	C1032	(0.01/400)	VCG-044

TR 1 UNIT

CAPACITORS

Mark	No.	Description	Part No.
	C1025		CKSQYF223Z50

PIONEER
The Art of Entertainment

Service Manual

ORDER NO.
RRZ1123

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STEREO CASSETTE DECK

CT-S430S

CHAPTER 2

CONTENTS

CHAPTER2

2.1 BLOCK DIAGRAM 2-2
2.2 EXPLODED VIEWS AND PACKING 2-3
2.3 SCHEMATIC DIAGRAMS 2-7
2.4 PCB CONNECTION DIAGRAM 2-13

PIONEER ELECTRONIC CORPORATION 4-1, Meguro 1-Chome, Meguro-ku, Tokyo 153, Japan
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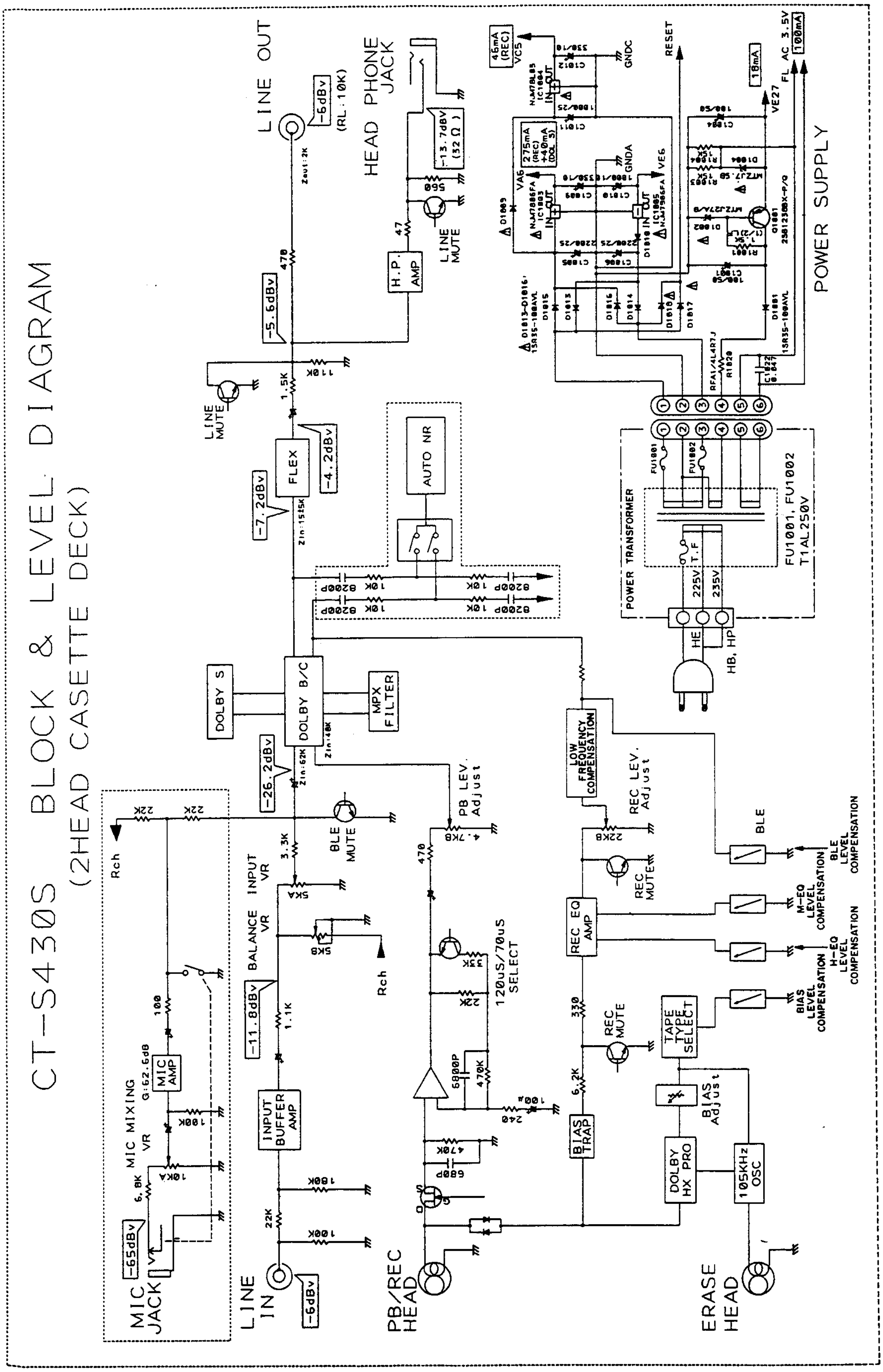
T – SSK APR. 1994 Printed in Japan

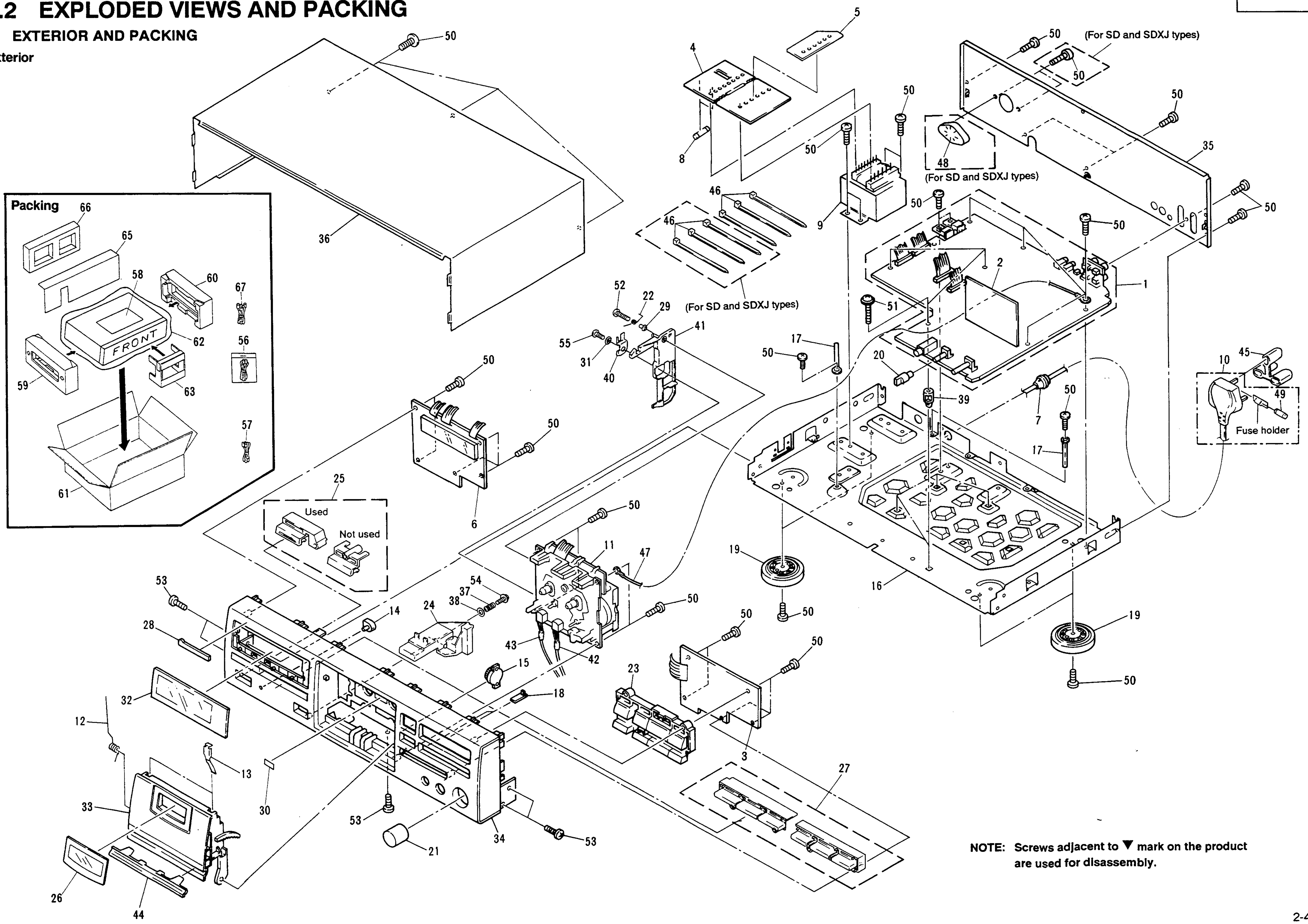
2.1 BLOCK DIAGRAM


CT-S430S BLOCK & LEVEL DIAGRAM
(2HEAD CASETTE DECK)
LINE OUT
-6dBv
(RL:10K)
Zout:2K
HEAD PHONE JACK
-13.7dBV (32Ω)
H.P. AMP
560
47
LINE MUTE
470
-5.6dBv
110K
1.5K
LINE MUTE
FLEX
-4.2dBv
-7.2dBv
Zin:1525K
AUTO NR
8200P 10K
DOLBY S
DOLBY B/C
MPX FILTER
Zin:62K
Zin:48K
-26.2dBv
22K
Rch
BLE MUTE
3.3K
INPUT VR
5KA
BALANCE VR
5KB
Rch
-11.8dBv
1.1K
INPUT BUFFER AMP
100K
22K
LINE IN
-6dBv
MIC MIXING VR
MIC AMP
G:62.6dB
100
10KA
6.8K
-65dBv
MIC JACK
PB LEV. Adjust
4.7KB
470
120uS/70uS SELECT
33K
22K
6800P
470K
240
100
470K
680P
PB/REC HEAD
LOW FREQUENCY COMPENSATION
REC LEV. Adjust
22KB
REC MUTE
REC EQ AMP
330
REC MUTE
6.2K
BIAS TRAP
TAPE TYPE SELECT
BIAS Adjust
DOLBY HX PRO
105KHz OSC
ERASE HEAD
BLE
BLE LEVEL COMPENSATION
M-EQ LEVEL COMPENSATION
H-EQ LEVEL COMPENSATION
BIAS LEVEL COMPENSATION
POWER SUPPLY
POWER TRANSFORMER
FU1001
FU1002
T.F
225V
235V
FU1001, FU1002 T1AL250V
HE
HB, HP
45mA (REC)
VC5
NJM78L05 IC1004
IN OUT
GNDC
C1012
C1011
RESET
10mA
VE27
FL AC 3.5V
100mA
275mA (REC) +40mA (DOL S)
VA6
NJM7806FA IC1003
GNDA
NJM7906FA IC1005
VE6
D1003
D1013~D1016: 1SR35-100AVL
D1015
D1013
D1016
D1014
D1010
D1017
Q1001 2SD1238X-P/Q
MTZJ27A/B
MTZJ7.5B
D1001 1SR35-100AVL
R1020 RFA1/4L4R7J
C1022 0.047
R1003 15K
R1004 15K
R1001 2.2K
C1001 100/50
C1004 100/50
1
2
3
4
5
6

2.2 EXPLODED VIEWS AND PACKING

1. EXTERIOR AND PACKING

Exterior


Packing
66
65
58
60
67
56
57
62
59
63
61
FRONT
Used
Not used
25
(For SD and SDXJ types)
(For SD and SDXJ types)
(For SD and SDXJ types)
Fuse holder
1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
20
21
22
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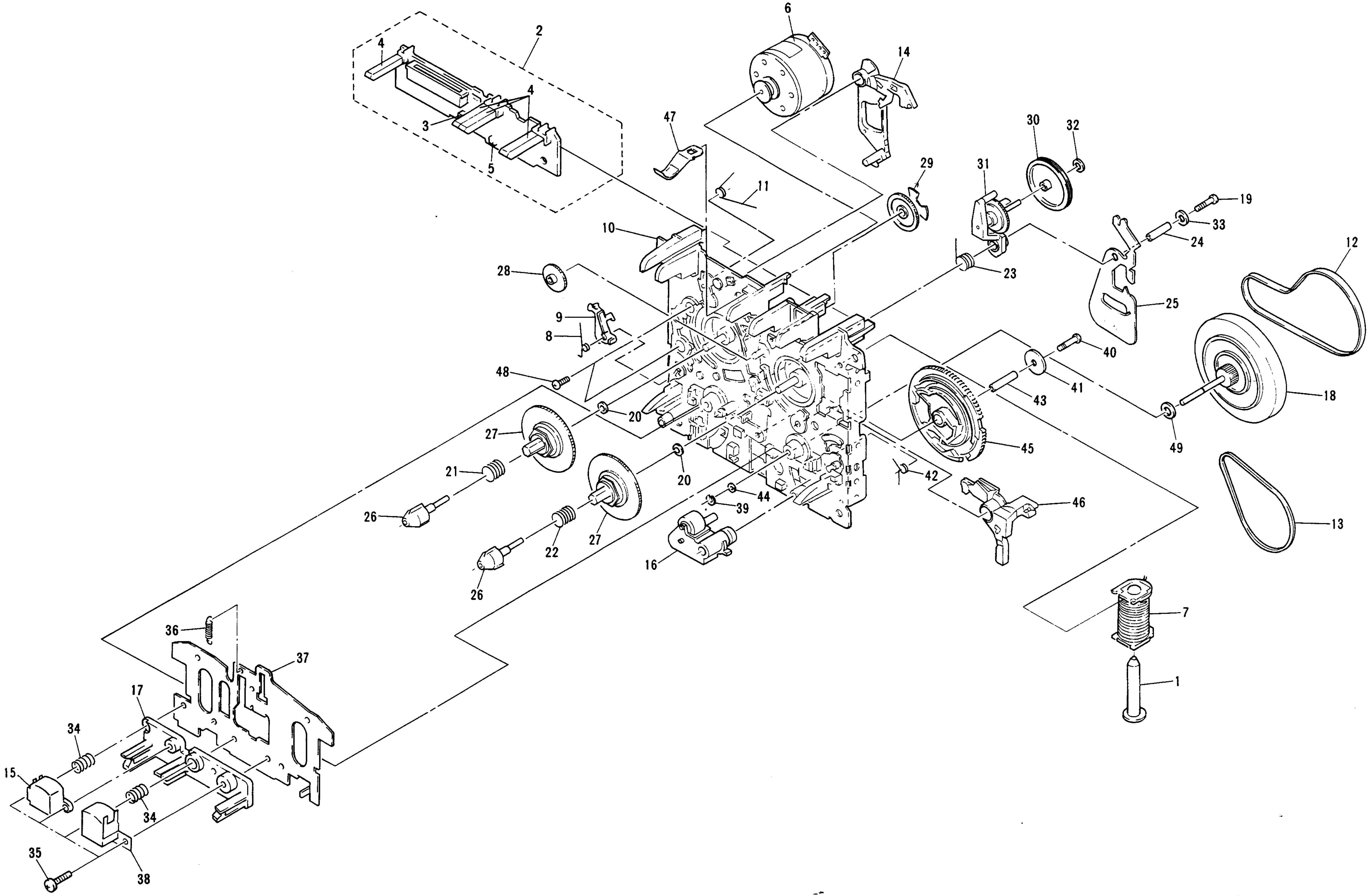
NOTE: Screws adjacent to ▼ mark on the product are used for disassembly.

2. MECHANISM UNIT


6
2
4
14
4
3
47
30
32
5
29
31
11
19
33
10
24
12
28
23
25
9
8
40
48
41
43
18
20
27
45
49
20
21
42
44
46
39
13
26
22
27
16
26
7
1
36
37
17
34
15
34
35
38

2.3 SCHEMATIC DIAGRAMS

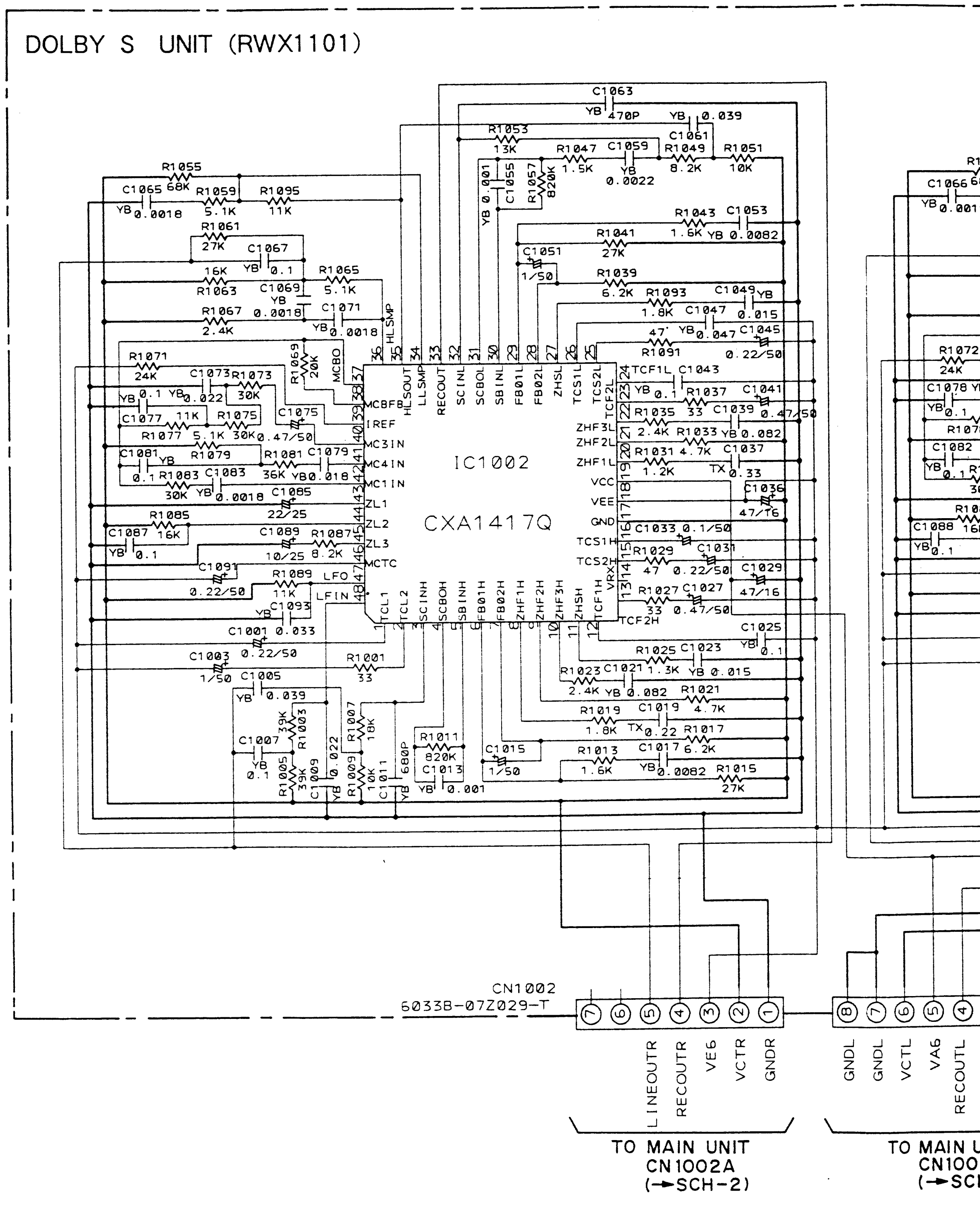
NOTE FOR SCHEMATIC DIAGRAMS (Type 6A)

1. **When ordering service parts, be sure to refer to "PARTS LIST of EXPLODED VIEWS" or "PCB PARTS LIST".**
2. **Since these are basic circuits, some parts of them or the values of some components may be changed for improvement.**
3. **RESISTORS:**
   Unit: k:kΩ, M:MΩ, or Ω unless otherwise noted.
   Rated power: 1/4W, 1/6W, 1/8W, 1/10W unless otherwise noted.
   Tolerance: (F): ±1%, (G): ±2%, (K): ±10%, (M): ±20% or ±5% unless otherwise noted.
4. **CAPACITORS:**
   Unit: p:pF or μF unless otherwise noted.
   Ratings: capacitor (μF)/ voltage (V) unless otherwise noted.
   Rated voltage: 50V except for electrolytic capacitors.
5. **COILS:**
   Unit: m:mH or μH unless otherwise noted.
6. **VOLTAGE AND CURRENT:**
   ▭ or ← V :
   DC voltage (V) in STOP mode unless otherwise noted.
   ⇦ mA or ← mA :
   DC current in STOP mode unless otherwise noted.
7. **OTHERS:**
   - ⊘ or ⊘ : Adjusting point.
   - ◁ : Measurement point.
   - The ⚠ mark found on some component parts indicates the importance of the safety factor of the parts. Therefore, when replacing, be sure to use parts of identical designation.
8. **SCH−☐ ON THE SCHEMATIC DIAGRAM:**
   - SCH−☐ indicates the drawing number of the schematic diagram. (SCH stands for schematic diagram.)
9. **SWITCHES** (Underline indicates switch position):

OPSW UNIT
S1401 : ◀◀REW
S1402 : REC
S1403 : AUTO BLE
S1404 : ■STOP
S1406 : FLEX (I/f)
S1407 : ▶▶FF
S1408 : ▶PLAY
S1409 : CD SYNCHRO
S1410 : ❚❚PAUSE
S1411 : REC MUTE
S1412 : DOLBY NR

FL UNIT
S1505 : POWER SW
S1506 : COUNTER RESET
S1507 : COUNTER MODE/DISP OFF
S1508 : METER RANGE

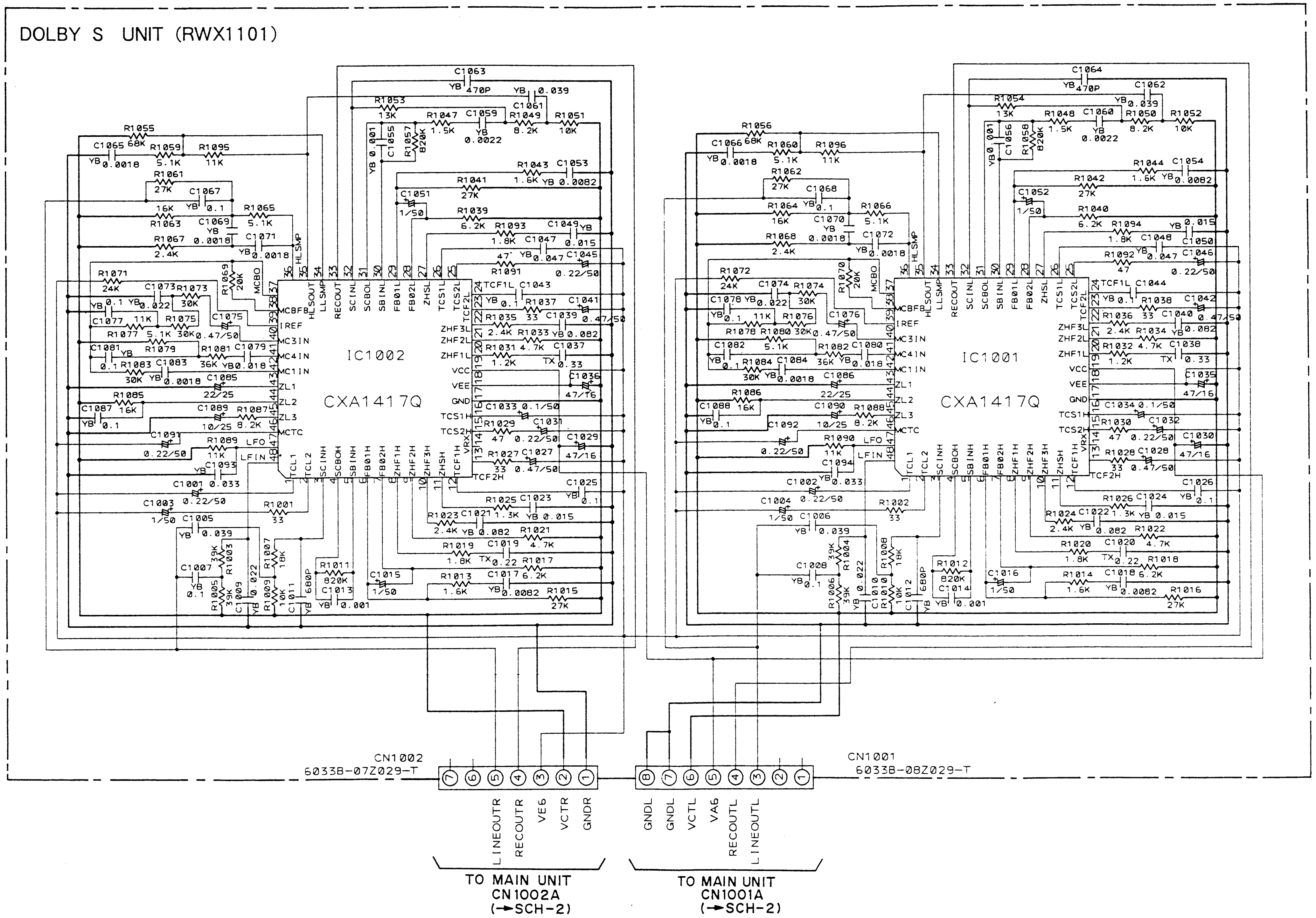
1. DOLBY S UNIT


DOLBY S UNIT (RWX1101)
IC1002
CXA1417Q
CN1002
6033B-07Z029-T
LINEOUTR
RECOUTR
VE6
VCTR
GNDR
GNDL
GNDL
VCTL
VA6
RECOUTL
TO MAIN UNIT
CN1002A
(→SCH-2)
TO MAIN U
CN100
(→SC

SCH−1 DOLBY S UNIT

1. DOLBY S UNIT

SCH-1


DOLBY S UNIT (RWX1101)
IC1002
CXA1417Q
IC1001
CXA1417Q
CN1002
6033B-07Z029-T
CN1001
6033B-08Z029-T
LINEOUTR
RECOUTR
VE6
VCTR
GNDR
GNDL
GNDL
VCTL
VA6
RECOUTL
LINEOUTL
TO MAIN UNIT
CN1002A
(→SCH-2)
TO MAIN UNIT
CN1001A
(→SCH-2)

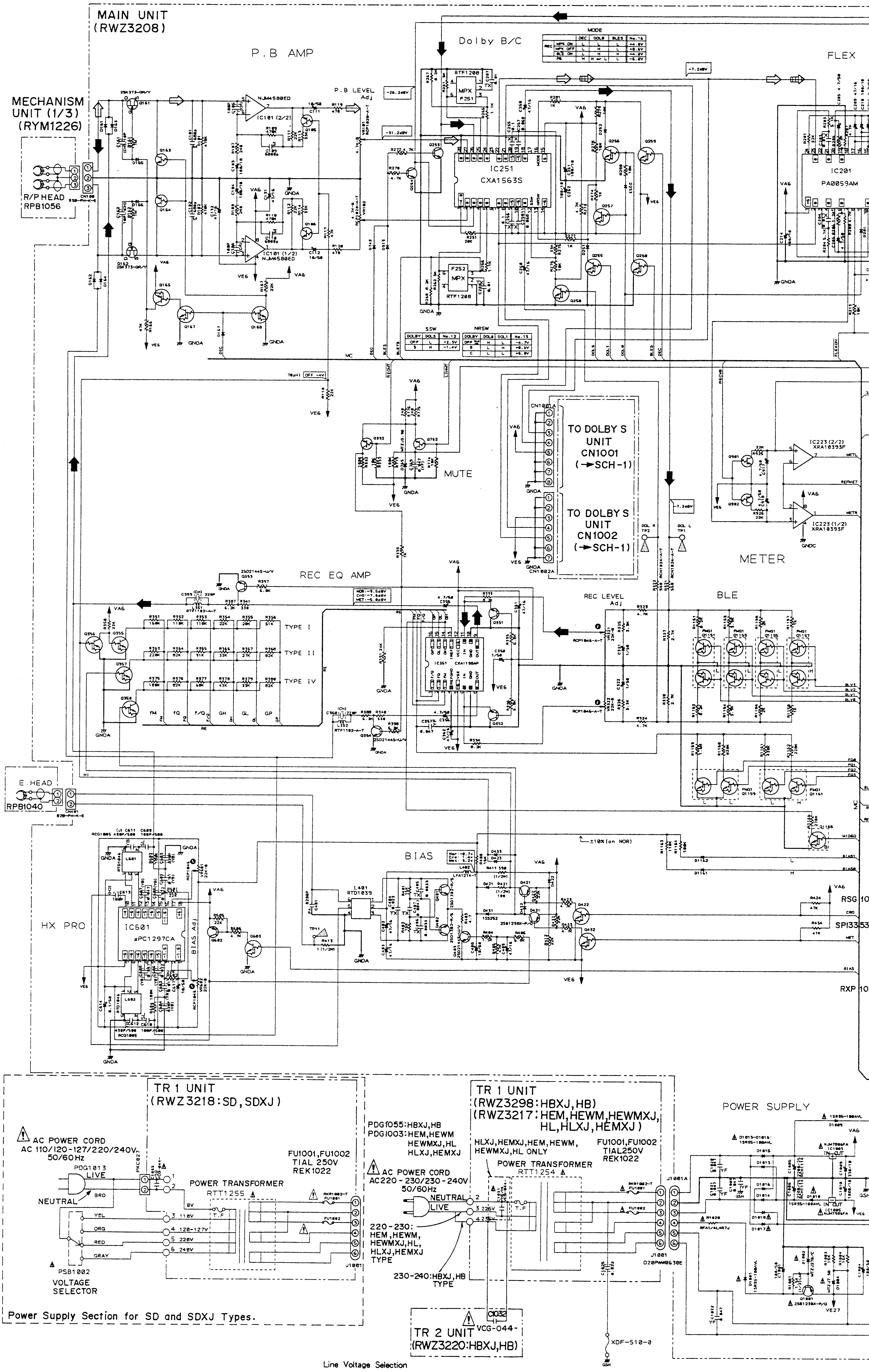
A

B

C

D

2. MAIN, OPSW, FL, TR 1 AND TR 2 UNIT


MAIN UNIT
(RWZ3208)
P.B AMP
Dolby B/C
FLEX
MECHANISM UNIT (1/3) (RYM1226)
R/P HEAD RPB1056
P.B LEVEL Adj
IC101 (2/2) NJM4580ED
IC101 (1/2) NJM4580ED
IC251 CXA1563S
IC201 PA0059AM
MPX F251
RTF1208
MPX F252
MODE
SSW
NRSW
MUTE
TO DOLBY S UNIT CN1001 (→SCH-1)
TO DOLBY S UNIT CN1002 (→SCH-1)
CN1001A
CN1002A
IC223 (2/2) XRA10393F
IC223 (1/2) XRA10393F
METER
REC EQ AMP
TYPE I
TYPE II
TYPE IV
IC351 CXA1196AP
REC LEVEL Adj
BLE
MECHANISM UNIT(2/3) (RYM1226)
E.HEAD RPB1040
BIAS
HX PRO
IC601 μPC1297CA
BIAS Adj
L401 RTD1039
RSG10
SPI33
RXP10
TR 1 UNIT (RWZ3218:SD,SDXJ)
AC POWER CORD AC 110/120-127/220/240V 50/60Hz
PDG1013
LIVE
NEUTRAL
POWER TRANSFORMER RTT1255
FU1001,FU1002 TIAL 250V REK1022
PSB1002 VOLTAGE SELECTOR
Power Supply Section for SD and SDXJ Types.
PDG1055:HBXJ,HB
PDG1003:HEM,HEWM HEWMXJ,HL HLXJ,HEMXJ
AC POWER CORD AC220-230/230-240V 50/60Hz
220-230: HEM,HEWM, HEWMXJ,HL, HLXJ,HEMXJ TYPE
230-240:HBXJ,HB TYPE
TR 1 UNIT (RWZ3298:HBXJ,HB) (RWZ3217:HEM,HEWM,HEWMXJ, HL,HLXJ,HEMXJ)
HLXJ,HEMXJ,HEM,HEWM, HEWMXJ,HL ONLY
POWER TRANSFORMER RTT1254
FU1001,FU1002 TIAL250V REK1022
J1001 D20PWW0630E
TR 2 UNIT (RWZ3220:HBXJ,HB)
C1032 VCG-044-
XDF-510-0
POWER SUPPLY

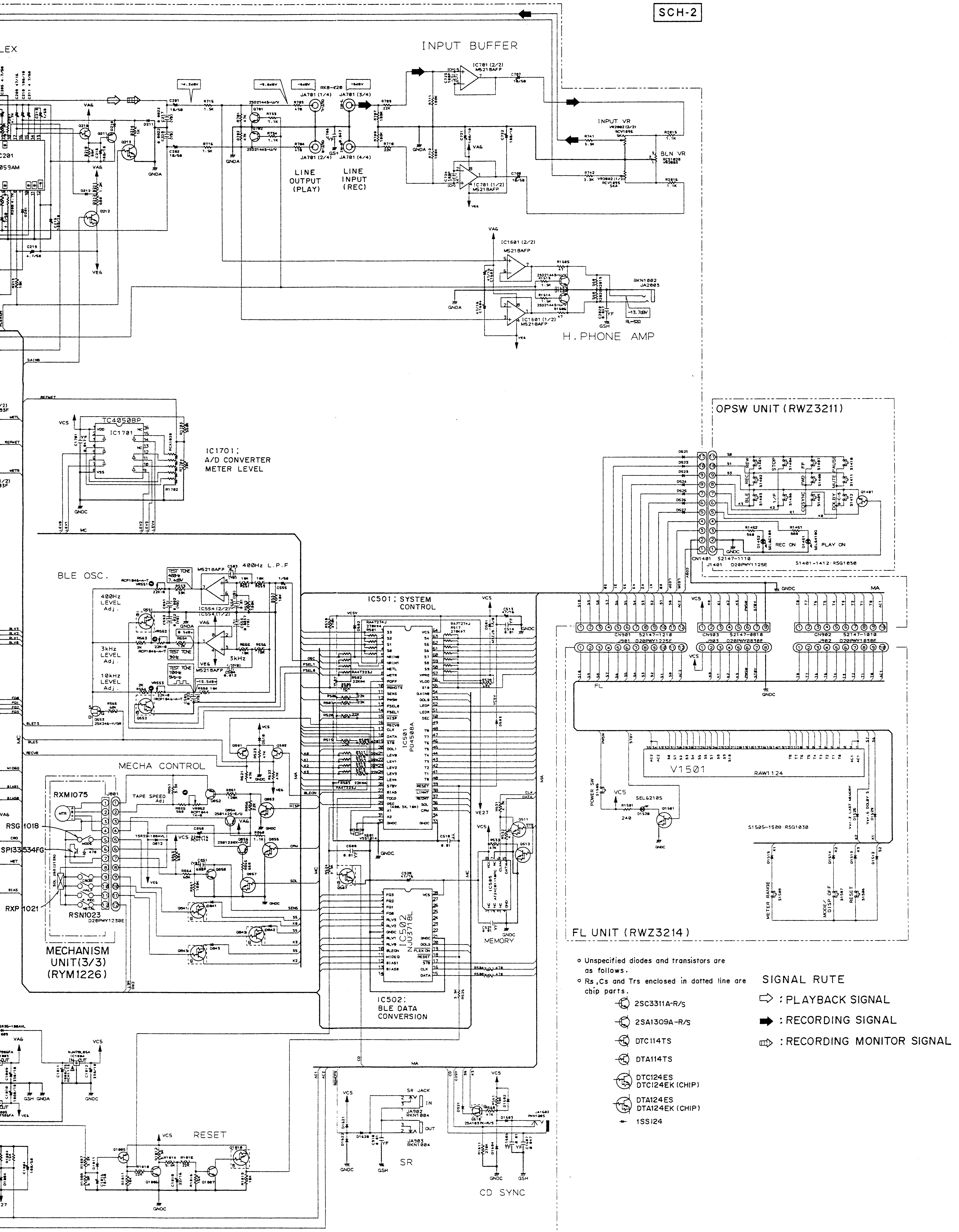
Line Voltage Selection

Line voltage can be chaged by the following modification :
1. Disconnect the AC power cord.
2. Remove the cover.
3. Chenge the connection of TRANSFORMER 1 UNIT primary pins.
4. Stick a line voltage label on the rear panel.

Part No.	Description
AAX - 193	220V label
AAX - 192	240V label

SCH–2

MAIN UNIT, OPSW UNIT,
FL UNIT, TR 1 UNIT,
TR 2 UNIT


SCH-2
INPUT BUFFER
IC701 (2/2) M5218AFP
IC701 (1/2) M5218AFP
LINE OUTPUT (PLAY)
LINE INPUT (REC)
JA701 (1/4)
JA701 (2/4)
JA701 (3/4)
JA701 (4/4)
INPUT VR
BLN VR
IC201
H.PHONE AMP
IC1601 (2/2) M5218AFP
IC1601 (1/2) M5218AFP
RKN1002 JA2003
OPSW UNIT (RWZ3211)
REW
REC
STOP
FF
PAUSE
MUTE
BLE
1/F
FWD
CDSYNC
DOLBY
REC ON
PLAY ON
CN1401 52147-1110
J1401 D20PWY1125E
S1401-1412: RSG1030
TC40508P
IC1701
IC1701: A/D CONVERTER METER LEVEL
BLE OSC.
400Hz L.P.F
400Hz LEVEL Adj.
3kHz LEVEL Adj.
10kHz LEVEL Adj.
TEST TONE 400Hz
TEST TONE 3kHz
TEST TONE 10kHz
IC554 (2/2)
IC554 (1/2)
M5218AFP
IC501: SYSTEM CONTROL
IC501 PU4508A
CN901 52147-1210
J901 D20PWY1225F
CN903 52147-0810
J903 D20PWY0830E
CN902 52147-1010
J902 D20PWY1030E
FL
V1501
RAW1124
POWER SW
SEL6210S
S1505-1508 RSG1030
METER RANGE
MODE/ DISP OFF
RESET
FL UNIT (RWZ3214)
MECHA CONTROL
RXM1075
TAPE SPEED Adj
RSG1018
SPI33534FG
RXP1021
RSN1023
D20PWY1230E
MECHANISM UNIT(3/3) (RYM1226)
IC502 NJU3718L
IC502: BLE DATA CONVERSION
IC505
MEMORY
RESET
SR JACK
JA902 RKN1004
JA903 RKN1004
IN
OUT
SR
CD SYNC
GNDC
GNDA
VCS
VA6
VE6
2SC3311A-R/S
2SA1309A-R/S
DTC114TS
DTA114TS
DTC124ES
DTC124EK (CHIP)
DTA124ES
DTA124EK (CHIP)
1SS124

- Unspecified diodes and transistors are as follows.
- Rs, Cs and Trs enclosed in dotted line are chip parts.

SIGNAL RUTE

⇨ : PLAYBACK SIGNAL

➡ : RECORDING SIGNAL

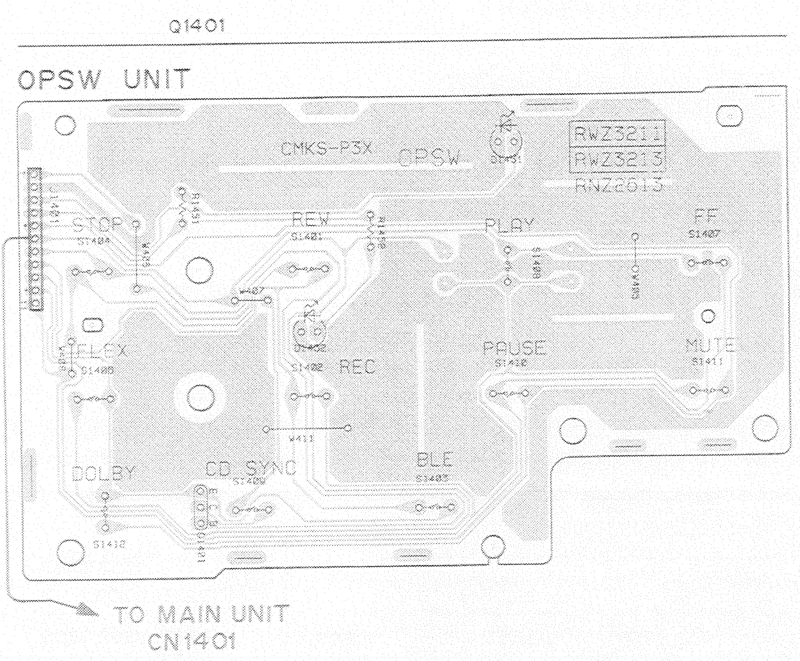
⇨ : RECORDING MONITOR SIGNAL

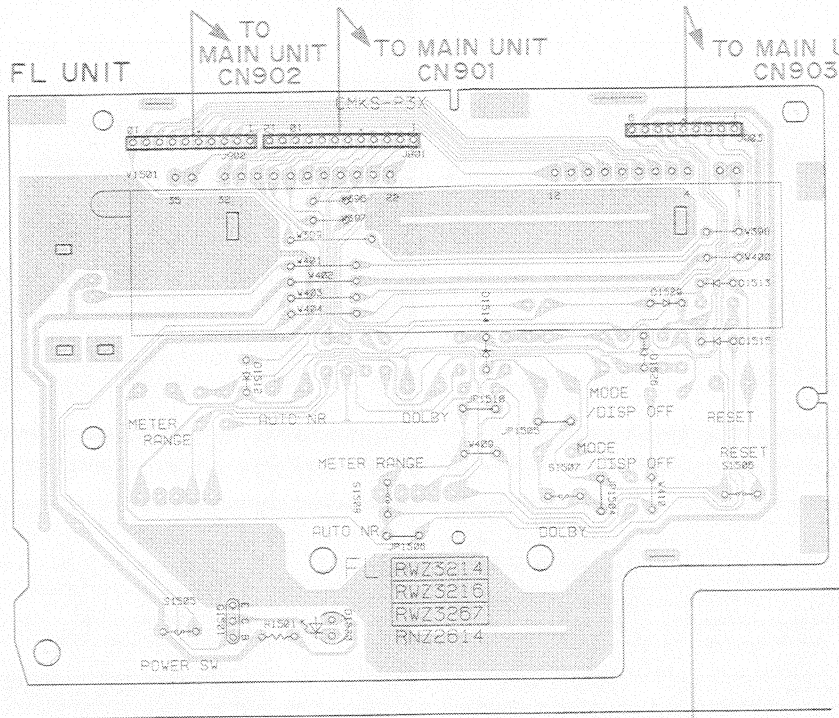
MAIN UNIT, OPSW UNIT,
FL UNIT, TR 1 UNIT,
TR 2 UNIT

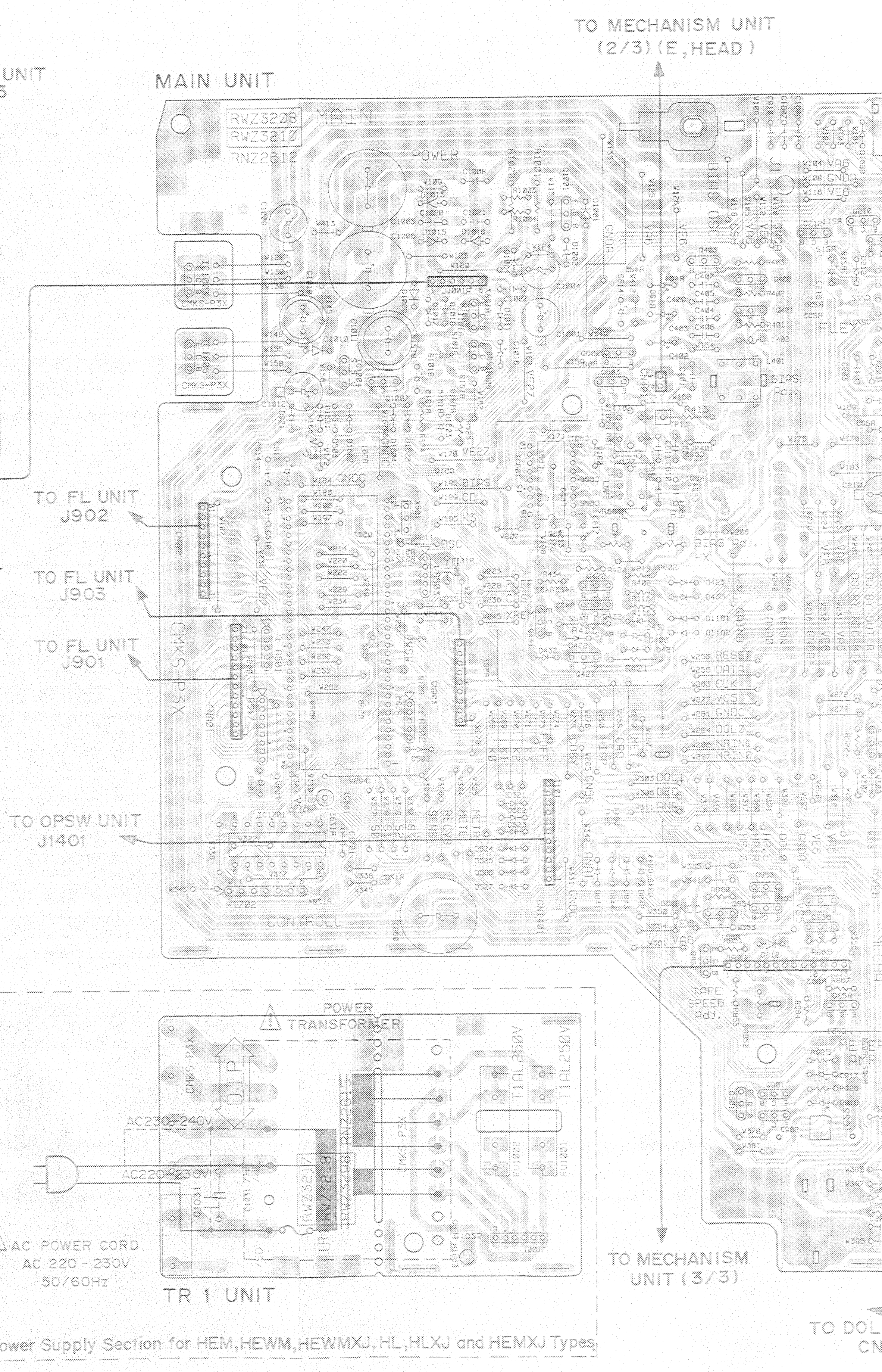
SCH−2

2.4 PCB CONNECTION DIAGRAM

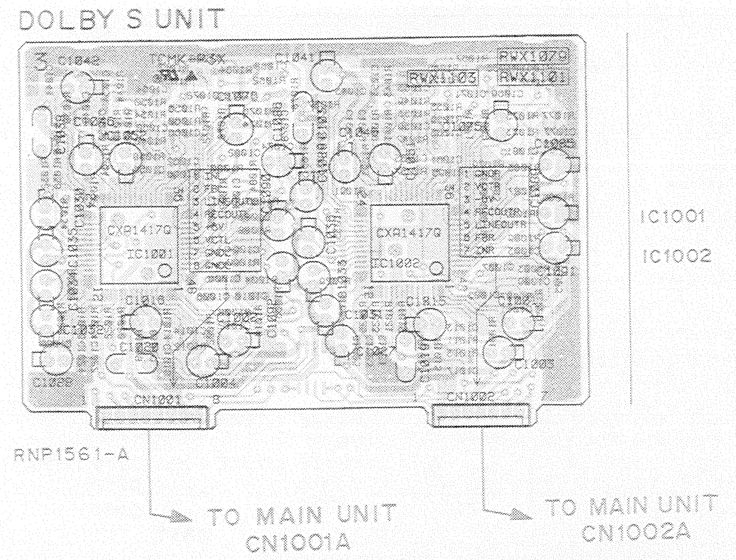
- **This diagram is viewed from the mounted parts side.**


Q1401
OPSW UNIT
CMKS-P3X
OPSW
RWZ3211
RWZ3213
RNZ2613
STOP
S1406
REW
S1401
PLAY
FF
S1407
FLEX
S1405
REC
S1402
PAUSE
S1410
MUTE
S1411
DOLBY
CD SYNC
S1409
BLE
S1403
S1412
TO MAIN UNIT
CN1401


FL UNIT
TO MAIN UNIT CN902
TO MAIN UNIT CN901
TO MAIN UNIT CN903
CMKS-P3X
METER RANGE
AUTO NR
DOLBY
MODE /DISP OFF
RESET
S1505
METER RANGE
S1507
S1508
AUTO NR
DOLBY
FL
RWZ3214
RWZ3216
RWZ3267
RNZ2614
POWER SW
S1501


TO MECHANISM UNIT (2/3)(E,HEAD)
MAIN UNIT
RWZ3208
RWZ3210
RNZ2612
MAIN
POWER
BIAS OSC
VEE7
TO FL UNIT J902
TO FL UNIT J903
TO FL UNIT J901
TO OPSW UNIT J1401
CMKS-P3X
BIAS
BIAS Adj.
RESET
DATA
CLK
VCS
GNDC
DOL
CONTROL
TAPE SPEED Adj.
TO MECHANISM UNIT (3/3)
TO DOL CN
POWER TRANSFORMER
AC230-240V
AC220-230V
AC POWER CORD
AC 220 - 230V
50/60Hz
TR 1 UNIT
T1AL250V
RWZ3217
RWZ3219
RNZ2615

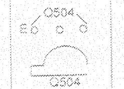
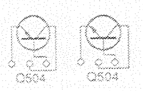
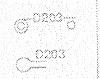
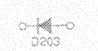
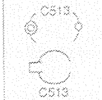
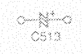
Power Supply Section for HEM,HEWM,HEWMXJ,HL,HLXJ and HEMXJ Types


DOLBY S UNIT
TCMK-P3X
RWX1079
RWX1303
RWX1101
CXA1417Q
IC1001
CXA1417Q
IC1002
CN1001
CN1002
IC1001
IC1002
RNP1561-A
TO MAIN UNIT
CN1001A
TO MAIN UNIT
CN1002A

- **This diagram is viewed from the pink colored foil side.**
- **This PCB is double sided.**

NOTE FOR PCB DIAGRAMS:

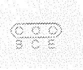
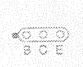
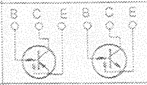
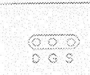
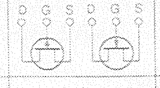
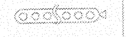
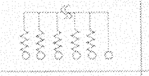
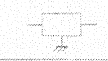
1. Part numbers in PCB diagrams match those in the schematic diagrams.
2. A comparison between the main parts of PCB and schematic diagrams is shown below.

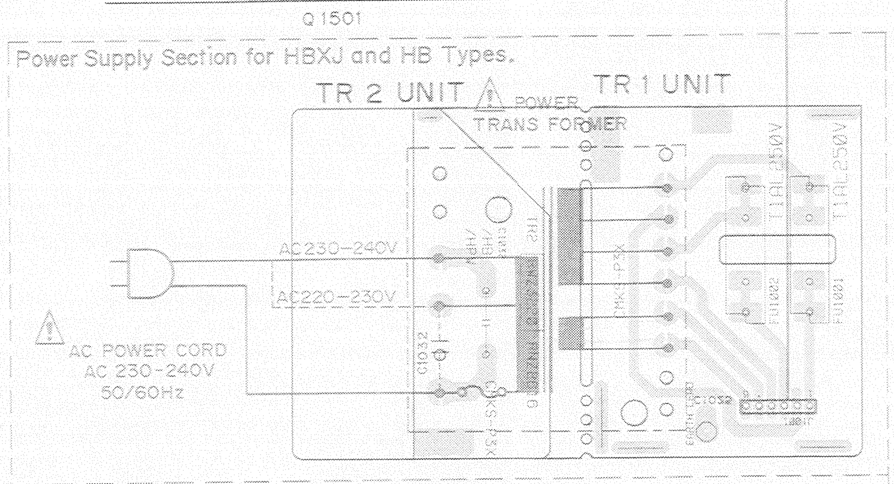
Symbol in PCB Diagrams	Symbol in Schematic Diagrams	Part Name
		Transistor
		Diode
		Capacitor (Polarized)

3. The transistor terminal marked with E or ⊏ shows the emitter.
4. The diode terminal marked with ◎ or ⊂ shows cathode side.
5. The capacitor terminal marked with ◎ or ⊏ shows negative terminal.

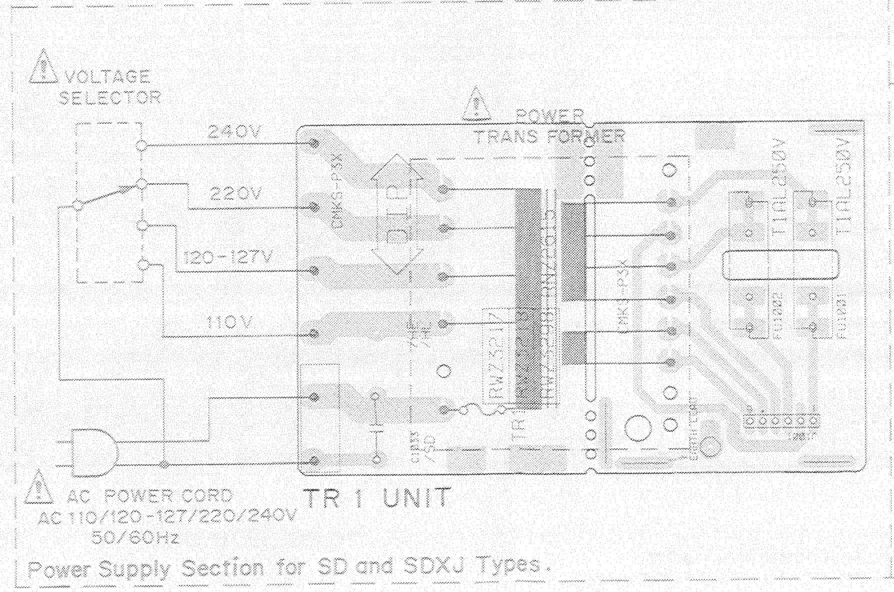
NOTE FOR PCB DIAGRAMS:

1. Part numbers in PCB diagrams match those in the schematic diagrams.
2. A comparison between the main parts of PCB and schematic diagrams is shown below.

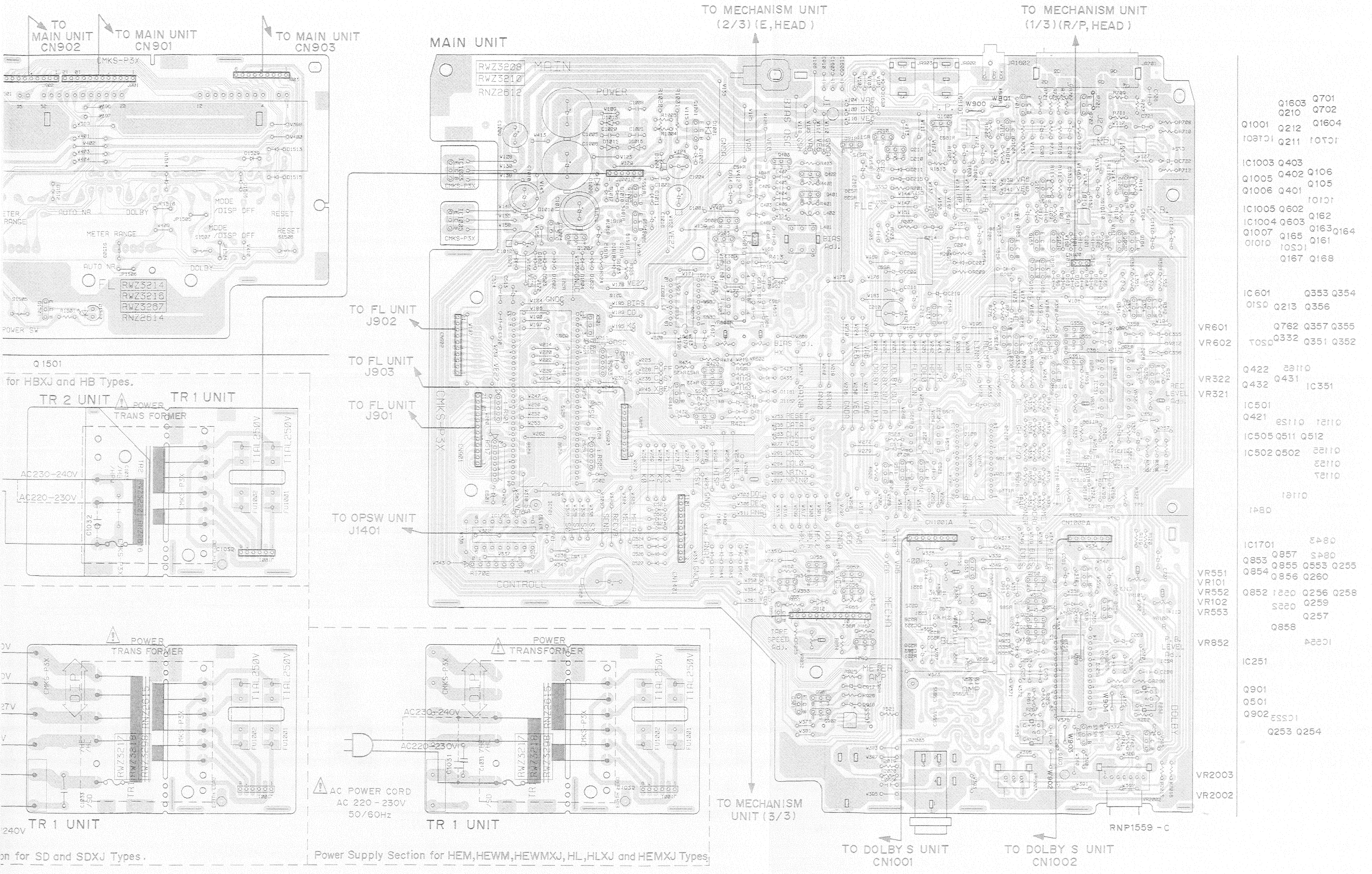
Symbol in PCB Diagrams	Symbol in Schematic Diagrams	Part Name
		Transistor
		Transistor with resistor
		Field effect transistor
		Resistor array
		3- terminal regulator


Q1501
TR 2 UNIT
POWER TRANS FORMER
TR 1 UNIT
AC230-240V
AC220-230V
AC POWER CORD
AC 230-240V
50/60Hz
T1AL250V
T1AL250V
CMKS-P3X

Power Supply Section for HBXJ and HB Types.

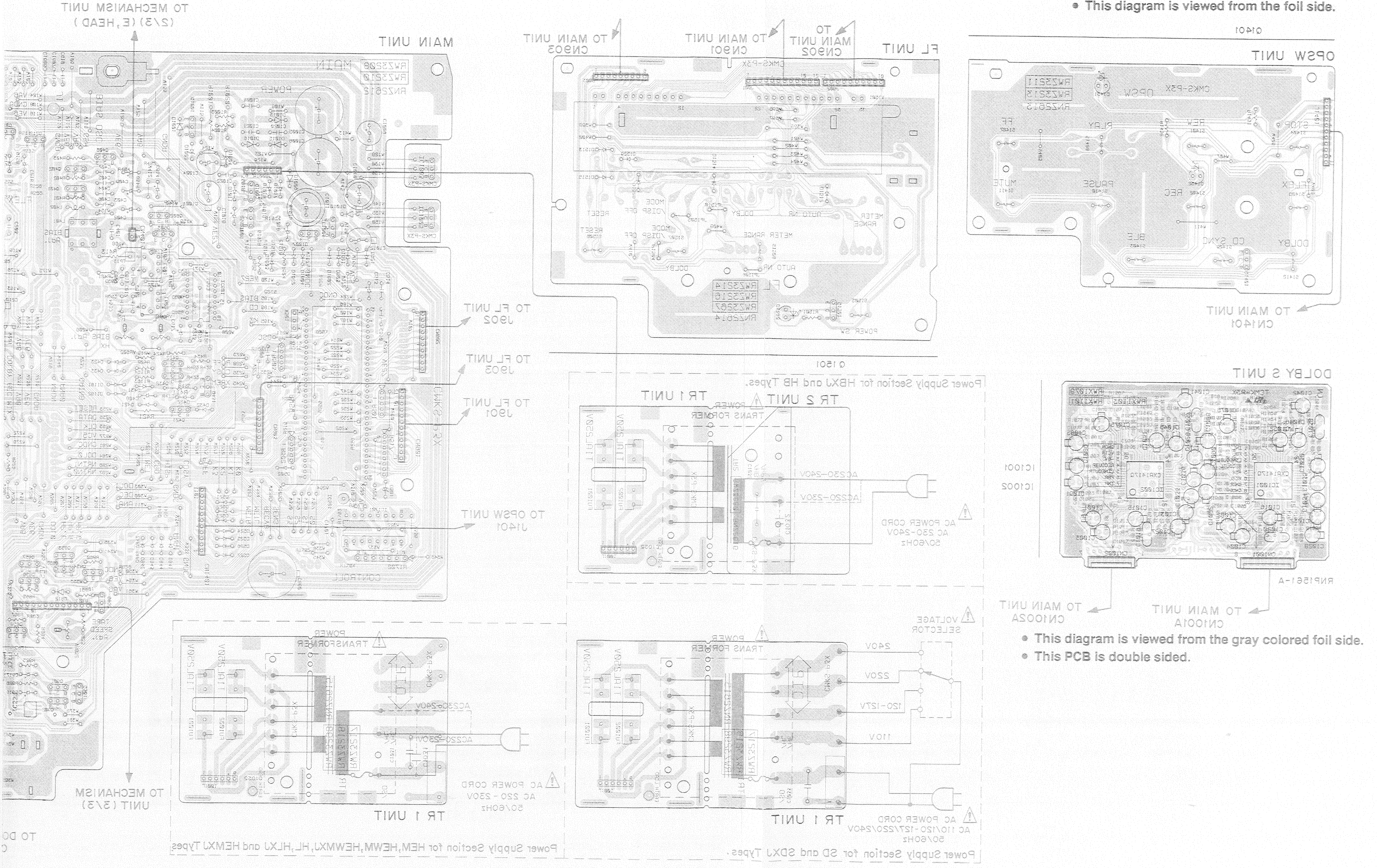

VOLTAGE SELECTOR
240V
220V
120-127V
110V
POWER TRANS FORMER
AC POWER CORD
AC 110/120-127/220/240V
50/60Hz
TR 1 UNIT
CMKS-P3X
RWZ3217
RWZ3218
RNZ2615
T1AL250V
T1AL250V

Power Supply Section for SD and SDXJ Types.


TO MAIN UNIT CN902
TO MAIN UNIT CN901
TO MAIN UNIT CN903
MAIN UNIT
TO MECHANISM UNIT (2/3) (E, HEAD)
TO MECHANISM UNIT (1/3) (R/P, HEAD)
RWZ3208
RWZ3210
RNZ2612
MAIN
POWER
BIAS OSC
FLEX
BIAS Adj.
BIAS Adj. HX
INPUT
REC LEVEL Adj.
METER RANGE
AUTO NR
DOLBY
MODE /DISP OFF
RESET
FL
RWZ3214
RWZ3216
RWZ3267
RNZ2614
POWER SW
Q1501
TO FL UNIT J902
TO FL UNIT J903
TO FL UNIT J901
TO OPSW UNIT J1401
CMKS-P3X
CONTROLL
for HBXJ and HB Types.
TR 2 UNIT
POWER TRANS FORMER
TR 1 UNIT
AC230-240V
AC220-230V
T1AL250V
TAPE SPEED Adj.
METER Adj.
MECHA
DOLBY
CN1001A
CN1002A
TO MECHANISM UNIT (3/3)
TO DOLBY S UNIT CN1001
TO DOLBY S UNIT CN1002
RNP1559-C
POWER TRANSFORMER
AC POWER CORD AC 220-230V 50/60Hz
TR 1 UNIT
TR 1 UNIT
on for SD and SDXJ Types.
Power Supply Section for HEM, HEWM, HEWMXJ, HL, HLXJ and HEMXJ Types
RWZ3217
RWZ3218
RNZ2615
D.I.P.
VR601
VR602
VR322
VR321
VR551
VR101
VR552
VR102
VR553
VR852
VR2003
VR2002
Q1001
IC1801
Q1603
Q210
Q212
Q211
Q701
Q702
Q1604
IC701
IC1003
Q1005
Q1006
Q403
Q402
Q401
Q106
Q105
IC101
IC1005
IC1004
Q1007
Q1010
Q602
Q603
Q165
IC201
Q167
Q162
Q163
Q164
Q161
Q168
IC601
Q210
Q213
Q353
Q354
Q356
Q762
Q332
Q801
Q357
Q355
Q351
Q352
Q422
Q432
Q431
Q1165
IC351
IC501
Q421
Q1129
Q1151
IC505
Q511
Q512
IC502
Q502
Q1155
Q1153
Q1157
Q1161
Q841
IC1701
Q853
Q854
Q857
Q855
Q856
Q843
Q842
Q553
Q255
Q260
Q852
Q551
Q552
Q256
Q258
Q259
Q257
Q858
IC554
IC251
Q901
Q501
Q902
IC253
Q253
Q254
3
4
5
6
7
8
9
A
B
C
D

2.4 PCB CONNECTION DIAGRAM

- This diagram is viewed from the foil side.


MAIN UNIT
TO MECHANISM UNIT (2/3) (E, HEAD)
TO MECHANISM UNIT (3/3)
TO FL UNIT J902
TO FL UNIT J903
TO FL UNIT J901
TO OPSW UNIT J1401
TO MAIN UNIT CN903
TO MAIN UNIT CN901
TO MAIN UNIT CN902
FL UNIT
OPSW UNIT
TO MAIN UNIT CN1401
DOLBY S UNIT
TO MAIN UNIT CN1002A
TO MAIN UNIT CN1001A
TR 1 UNIT
TR 2 UNIT
POWER TRANS FORMER
AC POWER CORD AC 230-240V 50/60Hz
AC POWER CORD AC 220-230V 50/60Hz
AC POWER CORD AC 110/120-127/220/240V 50/60Hz
VOLTAGE SELECTOR
240V
220V
120-127V
110V
RNP1561-A

Power Supply Section for HBXJ and HB Types.

Power Supply Section for HEM, HEWM, HEWMXJ, HL, HLXJ and HEMXJ Types.

Power Supply Section for SD and SDXJ Types.

- This diagram is viewed from the gray colored foil side.
- This PCB is double sided.